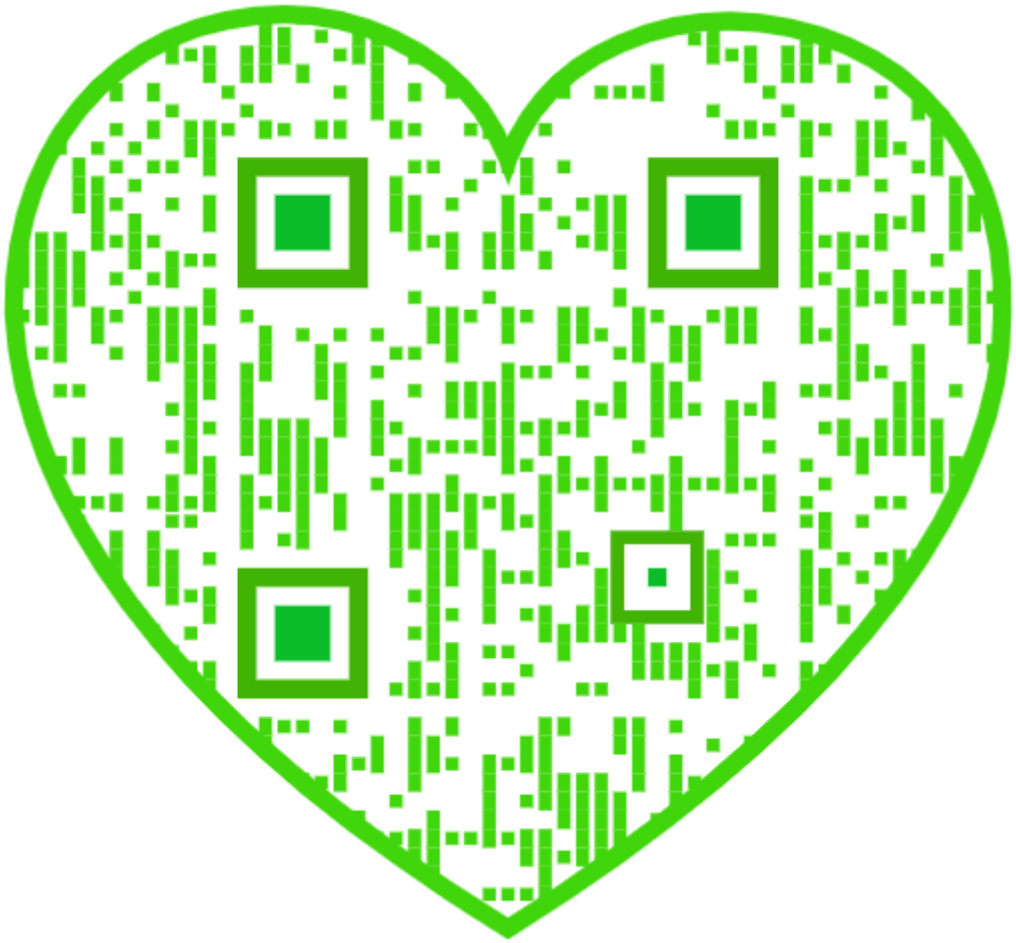

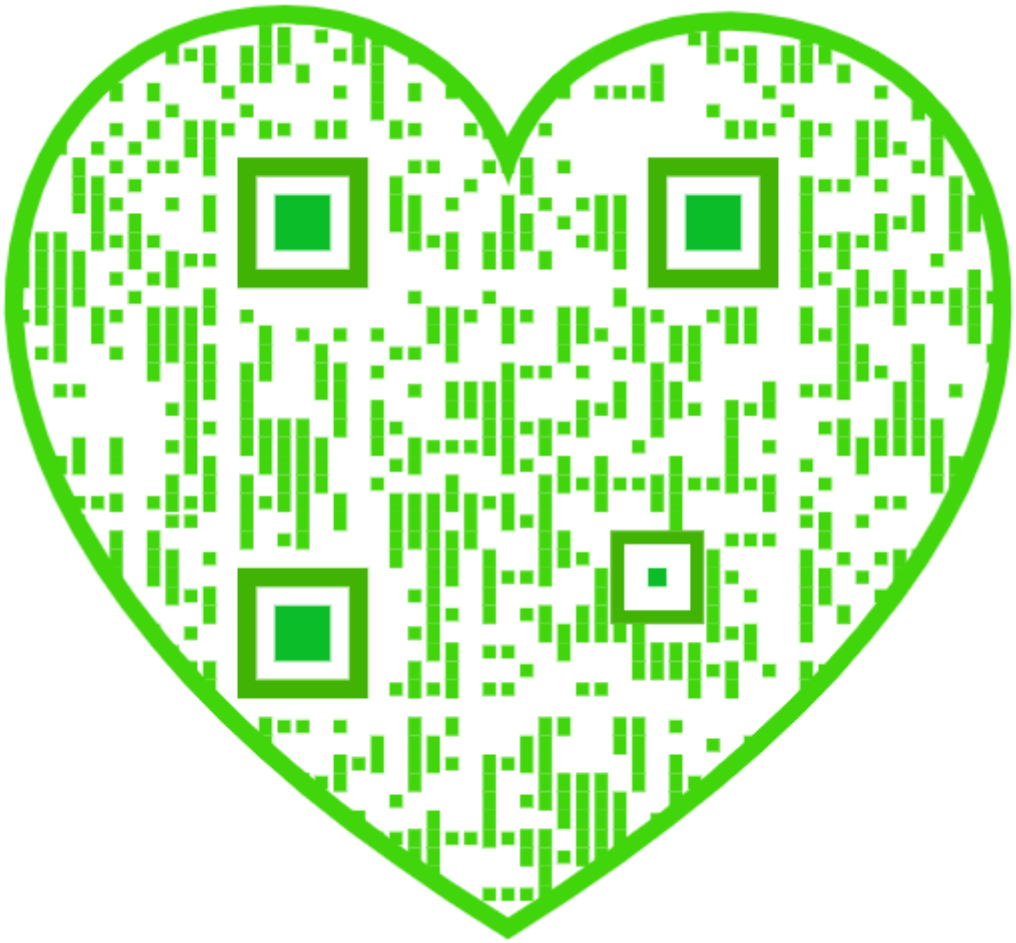

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Veterinarian.

Yours Truly,

W. P. Humphrey, D. V. S.

THE

VETERINARIAN.

A MANUAL

OF

PRACTICAL USE

TO OWNERS OF

DOMESTIC ANIMALS.

BY

W. P. HUMPHREY, D. V. S.

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This little work is respectfully dedicated to all interested in the welfare of the Horse and other domestic animals, by

THE AUTHOR.

KINDNESS.

Kindness to the horse is one of the most important factors in training the animal to gentleness and obedience. Become acquainted with your horse by kindness so that he will whinny at your approach. You will then have better control over him. When he is tired, even though you may be impatient to reach a given point, bear with him, recollecting how much he has done for you. Coax him, rather than use the lash. When not in use do not leave him locked up in the stable, to pine for a little fresh air; for this creates disease, besides causing him to become restive. Give your horse daily exercise; he needs it as much as you do, and it helps digestion. Have the harness made to fit, to avoid bruises and chafes. In cold weather have the bit warmed before placing in the mouth, as frozen bits cause smarting sores. In summer always use nets to prevent flies from annoying your horse. Be careful and not drive the horse further, nor faster than would be good for him; and see that he is properly clothed at all seasons. "A merciful man is merciful to his beast."

PREFACE.

Our object in publishing this edition is to describe in plain, terse language—easily understood by non-professional men—the different diseases that domestic animals are heir to, with the possible curatives for the same. It has been the custom, in publishing works on veterinary surgery, to indulge in incomprehensible parlance that was but little help to the ordinary reader.

We herewith present our readers with a work that will—except in desperate cases—enable them to become their own veterinarian. The remedies prescribed herein are as nearly infallible as possible, and are highly recommended throughout the world. The author is a graduate of the Veterinary College, and, having spent eighteen years as a practitioner, feels competent to select from the many veterinary works the most important notes, in addition to his own valuable experience.

THE VETERINARIAN.

AIR.

The mistaken idea that a horse or a cow should be penned up in a close, airless box is an exploded theory. Animals need air at night as much as human beings. Let the stable be well ventilated, at the same time avoiding draughts, and your animal will be healthier and do you better service than if locked in a hot stable. It is a mistaken kindness to shut out all air, thinking to prevent cold or disease. Close quarters and bad drainage in a stable actually create disease. It has been supposed that a hot stable was necessary to secure a glossy coat. This theory has also been proven erroneous. Nature attends to its own. What is required is fresh air, good drainage and careful grooming to keep a horse in good condition. It has also been stated that clipping in winter is cruelty. This may be a fact with working or agricultural horses, where they go

slow, and need their winter overcoats; but for a road horse clipping is certainly an advantage. No matter how cold the weather, a horse will sweat after a hard drive. He is led to the stable, and probably blanketed; if clipped he will soon become cool and dry; but with the long winter coat the hair keeps damp all night, thus causing cold. Therefore, it depends wholly upon the work the animal has to perform as to whether it is a kindness or cruelty to clip.

THE PULSE.

The blood flows constantly; experiments have proved it traverses the whole body in a very few seconds in a horse, an ox in about twenty seconds; dog, fifteen seconds; goat, twelve seconds; rabbit, six seconds. The great agent of circulation is the heart. It is a large, hollow, muscular organ divided into separate compartments for the reception of the blood, and by alternate dilations and contractions, assisted by valves, the current is confined to one direction. The arteries receive the blood as it leaves the heart, and the impulse arising from the presure of an extra quantity forced into them is communicated first to the column of fluid already within the tube,

and next to the elastic walls, causing them to expand rapidly; then, by reason of their muscular contractility the flow of blood is equalized and the vessels return to their previous calibre. These alternate expansions and contractions are continuous, entirely in accordance with the action of the heart and are demonstrated "the pulse." Without the contractions of the heart there can be no pulse, and therefore, we have to learn the conditions thus exhibited by the arteries are plain indications not only of the heart in health and disease, but of the circulation generally. The arteries in all parts of the body afford similar evidences, but those far removed, as in the limbs, do not as a rule expand immediately on the contraction of the heart, as in larger trunks and those nearer to that organ. A perceptible time elapses and the impulse is also somewhat diminished. There is no pulse in the veins. As the blood passes through the capillaries, which are very small and numerous, the current is less influenced by the force of the heart, the pulse is lost, and the blood returns by the veins in a steady, uninterrupted flow.

The pulse is conveniently felt at the jaw. At this part the sub-maxillary artery comes from the

inside, and winding along, passes over the lower edge of the bone and mounts upwards on the outer side of the face, in front of the large, flat muscle which closes the jaws. Here the artery of the right side is felt by means of the second and third fingers of the left hand, which are pressed upon it towards the inner side of the bone, while the thumb is placed outside in order to maintain steady pressure. The artery of the left side may be also conveniently examined. The circulation is more active in young animals than in old ones. Observations establish the number of pulsations per minute in different animals, in health, as follows :

Horses - - -	38 to 42.
Cattle - - -	50 " 55.
Sheep - - -	70 " 75.
Hogs - - -	75 " 80.

STABLE MANAGEMENT.

BEDDING.

The vapor of hartshorn, which is so plentifully given out from the urine of the horse in a heated stable, is a matter of grave consideration to the owner, who, while unable to stand the odor five minutes, fails to appreciate the fact that his horse must breathe the foul air all night.

The subject of bedding comes naturally next in order. The first caution is, frequently to remove it. The early extrication of gas shows the rapid putrefaction of the urine; the consequence of which will be the rapid putrefaction of the bedding which is moistened by it. Every thing hastening to decomposition should be carefully removed, where life and health are to be preserved. The bedding which has been much wet or at all softened by the urine, and is beginning to decay, should be swept away every morning; the greater part of the remainder may then be piled under the manger; a little being left to prevent the painful and injurious pressure of the feet on the hard pavement during the day. The soiled and soaked portion of that which was left should be removed at night. In the better kind of stables, however, the stalls should be completely emptied every morning.

No heap of fermenting dung should be suffered to remain during the day in the corner or in any part of the stable.

LIGHT.

This neglected branch of stable-management is of far more consequence than is generally

imagined. The farmer's stable is frequently destitute of any glazed window, and has only a shutter, which is raised in warm weather, and closed when the weather becomes cold. When the horse is in the stable only during a few hours in the day, this is not of so much consequence, nor of so much, probably, with regard to horses of slow work ; but to carriage-horses and roadsters, so far at least as the eyes are concerned, a dark stable is little less injurious than a foul and heated one. In order to illustrate this, reference may be made to the unpleasant feeling and the utter impossibility of seeing distinctly when a man suddenly emerges from a dark place into the full glare of day. The sensation of mingled pain and giddiness is not speedily forgotten, and some minutes elapse before the eye can accustom itself to the increased light. If this were to happen every day, or several times a day, the sight would be irreparably injured, or possibly blindness would be the final result. We need not wonder, then, that the horse, taken from a dark stable into a blaze of light, feeling, probably, as we should under similar circumstances, and unable for a time to see anything around him distinctly, should become a

shyer, or that the frequently-repeated, violent effect of sudden light should induce inflamation of the eye so intense as to terminate in blindness.

If plenty of light be admitted, the walls of the stable, and especially that portion of them which is before the horse's head, must not be of too glaring a color. The color of the stable should depend on the quantity of light. At any rate, a soft, mellow light in a stable is the most conducive to the healthy repose of the horse.

FOOD.

One-half of the diseases of the horse owe their origin to over-feeding with hay. This applies more particularly to young horses, and to such as are not put to severe work. They are ever placed before a full rack, and, like children gorged with bread and butter, they eat merely for amusement, until at length the stomach gradually becomes preternaturally distended, the appetite increases in a relative proportion, becomes sooner or later voracious, and finally merges into a mere craving—it being a matter of indifference what the food is so that the stomach is filled with it. This depravity of appetite is always accompanied with more or less thirst. This, naturally

enough, produces general debility of the entire digestive function, including stomach, bowels, liver, spleen, and pancreas ; worms are produced in thousands, and symptoms present themselves of so many varied hues that enumeration, far less classification, becomes utterly impossible.

Upon eight pounds of hay daily, with a due allowance of oats, a horse can be kept in full work in prime health and spirits. It is better to keep young horses at grass until about five years old, and to work them during that period. When kept in the stable and not worked they are apt to acquire many very bad habits, and if the rack and manger be kept empty with a view of preventing the over-loading of their stomachs they will fall into a habit of playing with and mouthing them—a habit which finally degenerates into wind-sucking or crib-biting.

The horse of the inferior farmer is sometimes fed on hay or grass alone, and the animal—although he rarely gets a feed of grain—maintains himself in tolerable condition, and performs the work required of him ; but hay and grass alone, however good in quality, or in whatever quantity allowed, will not support a horse under hard work.

OATS.

Oats have been selected as that portion of the food which is to afford the principal nourishment. They contain from seven hundred and forty-three to seven hundred and fifty parts of nutritive matter. They should be about, or somewhat less than, a year old—heavy, dry and sweet. New oats will weigh ten or fifteen per cent. more than old ones; but the difference consists principally in watery matter, which is gradually evaporated. New oats are not so readily ground down by the teeth as old ones. They form a more glutinous mass, difficult to digest, and, when eaten in considerable quantities, are apt to occasion colic, or even staggers.

The old oat forms, when chewed, a smooth and uniform mass, which readily dissolves in the stomach and yields the nourishment which it contains. There are no efficient and safe substitutes for good oats; but, on the contrary, it may be safely asserted that they possess an invigorating property which is found in no other kind of food.

OATMEAL.

Oatmeal forms a poultice more stimulating than one composed of linseed meal alone, or

they may be mingled in different proportions, as circumstances require. In the form of gruel, it constitutes one of the most important articles of diet for the sick horse ; not, indeed, to be forced upon him, but a pail containing it being slung in his box, of which he will soon begin to drink when water is denied. Gruel is generally either not boiled long enough, or a sufficient quantity of oatmeal is not used for it. The proportions should be, a pound of meal thrown into a gallon of water, and kept constantly stirred until it boils —and five minutes afterwards.

WHITE-WATER.

White-water, made by stirring a pint of oatmeal in a pail of water—the chill being taken from it—is an excellent beverage for the thirsty and tired horse.

WHEAT, BARLEY, RYE, ETC.

Wheat, barley, rye and other heavy grains contain a greater portion of gluten or sticky, adhesive matter than oats. They are difficult of digestion, and apt to cake and form obstructions in the bowels. This will more often be the case if the horse is suffered to drink much water soon after feeding upon them.

Fermentation, colic, and death, are occasionally the consequence of eating any great quantity of heavy grains. A horse that is fed on them should have very little hay.

FLOUR.

Flour mixed with water to the thickness of starch is given with good effect in over-purging, especially if combined with chalk and opium.

BRAN.

Bran is given to sick horses on account of the advantage derived from its relaxing the bowels. There is no doubt that it does operate gently on the intestinal canal and assists in quickening the passage of its contents, when occasionally given; but it must not be a constant food.

A bran mash made with boiling water should stand until cool. Add a handful of salt, and, if given at night twice a week, with no other grain for supper, it will give the digestive organs a chance to rest, and materially assist digestion, and will also have a tendency to prevent flatulent colic. In connection with this, Humphrey's Condition Powders should be used according to directions.

LINSEED.

Linseed is sometimes given to sick horses—raw, ground and boiled.

HAY.

Hay is most in perfection when it is about a year old. The horse, perhaps, would prefer it earlier, but it is then neither so wholesome nor so nutritive, and often has a purgative quality. When it is about a year old it retains, or should retain, somewhat of its green color, its agreeable smell and its pleasant taste. It has undergone the slow process of fermentation by which the sugar which it contains is developed and its nutritive quality is fully exercised. Old hay becomes dry and tasteless, innutritive and unwholesome. After the grass is cut and the hay stacked, a slight degree of fermentation takes place in it. This is necessary for the development of the saccharine principle; but it occasionally proceeds too far, and the hay becomes mow-burnt, in which state it is injurious, or even poisonous. The horse soon shows the effect which it has upon him. He becomes hide-bound; his strength is wasted; his thirst is excessive, and he is almost worthless.

It is a good practice to sprinkle the hay with water in which salt has been dissolved. It is evidently more palatable to the animal who will leave the best unsalted hay for that of an inferior quality which has been moistened with brine, and there can be no doubt that the salting materially assists the process of digestion.

ADMINISTERING MEDICINE.

The most successful method of administering medicine to the horse is by means of a bolus, which is an oblong capsule. When a cathartic is required, Humphrey's Physic Bolus is the most effectual, and the only safe and reliable cathartic known on the market. It must be used according to directions which accompany each bolus.

A cathartic cannot be given to a horse with safety that will commence to operate in less than about twenty-four hours from the time it is given. If possible, a horse should be given a bran mash, with a handful of salt in it, about twelve hours before giving a bolus.

DIRECTIONS.

Take the end of the tongue in the left hand, be careful not to pull hard enough to injure it;

place the bolus between the three first fingers and the thumb in the right hand, then put the bolus behind the root of the tongue, pull the hand back a trifle, then push the bolus into the horse's throat, pull the right hand out of the mouth, at the same time let go of the tongue with the left hand, then hold the horse's head up high until he swallows the bolus. If the horse should not commence to physic at the end of twenty-four hours, exercise him until the physic commences to operate, then place him in a stall and never, under any circumstances, allow a horse to be exercised while physicing. A horse should have a box of Humphrey's Conditlon Powders as a tonic after physicing.

The safest and easiest way to give a bolus is with a boling iron. This is a simple instrument that every horse owner should possess. Have an oblong ring made of half-round iron, 6x3½ inches, then have welded on each end of the ring a bar of the same size iron, about six inches long. Insert the ring in the horse's mouth, allowing the bars to lay against the outside of the mouth. You can then, with safety, put your hand in the mouth through the ring and push the bolus down the throat. This iron is also very

handy when you wish to examine a horse's teeth.

BOLING IRON.

DRENCH.

The administration of a drench is a much more troublesome affair than the giving of a boll, and in almost all cases more or less of the dose is wasted. The best instrument for giving a drench is the horn of the ox. Bottles are sometimes used, but their fragile nature always renders them dangerous. In giving a drench the head must be elevated; the drench is then carefully poured into the throat—the head still kept up till it is all swallowed. Allowance should always be made for some waste in giving a drench.

Very often the horse will refuse to swallow, and hold the liquid in his mouth. When this is the case, hold the mouth of the vessel containing the drench against the roof of the horse's mouth. In this way force the mouth open, then the liquid follows down to the throat, and he is thereby forced to swallow. Never choke a horse to make him swallow, or pour liquid of any kind into the nose. The writer has seen a number of

horses die from this abominable practice. When the horse's head is raised the epiglottis is very liable to be open. If this be the case, liquid poured into the nose follows down the wind-pipe to the lungs, causing bronchitis and congestion of the lungs, which is very apt to ultimately result in death.

BREAKING.

If you want to tie up your colt, put him in a tolerably wide stall—which should not be too long—and should be connected by a bar or something of that kind, to the partition behind it; so that after the colt is in he cannot go far enough back to take a straight, backward pull on the halter; then, by tying him in the centre of the stall, it would be impossible for him to pull on the halter, the partition behind preventing him from going back, and the halter in the centre checking him every time he turns to the right or left. In a stall of this kind you can break any horse to stand tied with a light strap, anywhere, without his ever knowing anything about pulling. For, if you have broken your horse to lead, and have taught him the use of the halter, (which you should always do before you hitch him to

anything), you can hitch him in any kind of a stall, and if you give him something to eat to keep him up to his place for a few minutes at first, there is not one colt in fifty that will pull on his halter.

HOW TO MAKE A HORSE LIE DOWN.

To make a horse lie down, bend his left fore-leg and slip a loop over it, so that he cannot get it down. Then put a surcingle around his body, and fasten one end of a long strap around the other fore-leg just above the hoof. Place the other end under the before-described surcingle, so as to keep the strap in the right direction; take a short hold of it with your right hand; stand on the left side of the horse, grasp the bit in your left hand, pull steadily on the strap with your right; bear against his shoulder till you cause him to move. As soon as he lifts his weight your pulling will raise the other foot and he will have to come on his knees. Keep the strap tight in your hand so that he cannot straigten his leg if he rises up. Hold him in this position, and turn his head toward you; bear against his side with your shoulder—not hard—but with a steady, equal pressure, and in about

ten minutes he will lie down. As soon as he lies down he will be completely conquered, and you can handle him as you please. Take off the straps and straighten out his legs; rub him lightly about the face and neck, with your hand, the way the hair lies; handle all his legs, and after he has lain ten or twenty minutes let him get up again. After resting him a short time make him lie down as before. Repeat the operation three or four times, which will be sufficient for one lesson. Give him two lessons a day, and when you have reached four lessons he will lie down by taking hold of one foot. As soon as he is well broken to lie down in this way tap him on the opposite leg with a stick, when you take hold of his foot, and in a few days he will lie down from the mere motion of the stick.

HOW TO ACCUSTOM A HORSE TO A BIT.

You should use a large, smooth snaffle bit, so as not to hurt his mouth, with a bar to each side, to prevent the bit from pulling through either way. This you should attach to the head-stall of your bridle, and put it on your colt without any reins to it, and let him run loose in a large stable or shed some time, until he becomes a little used

to the bit, and will bear it without trying to get it out of his mouth. It would be well, if convenient, to repeat this several times, before you do anything more with the colt; as soon as he will bear the bit, attach a single rein to it. You should also have a halter on your colt, or a bridle made after the fashion of a halter, with a strap to it, so that you can hold or lead him about without pulling at the bit much. He is now ready for the saddle.

THE PROPER WAY TO BIT A COLT.

Farmers often put bitting harness on a colt the first thing they do to him, buckling up the bitting as tight as they can draw it, to make him carry his head high, and then turn him out in a field to run half a day at a time. This is one of the worst punishments that could be inflicted on the colt, and is very injurious to a young horse that has been used to running in pasture with his head down. Colts have been so seriously injured in this way that they have never recovered.

A horse should be well accustomed to the bit before you put on the bitting harness, and when you first bit him you should only rein his head up to that point where he naturally holds it, let

that be high or low; he will soon learn that he cannot lower his head, and that raising it a little will loosen the bit in his mouth. This will give him the idea of raising his head to loosen the bit, and then you can draw the bitting a little tighter every time you put it on, and he will still raise his head to loosen it; by this means you will gradually get his head and neck in the position you want him to carry them, and give him a nice and graceful carriage without hurting him, making him mad, or causing his mouth to get sore.

If you put the bitting on very tight the first time he cannot raise his head enough to loosen it, but will bear on it all the time, and paw, sweat and throw himself. Many horses have been killed by falling backward with the bitting on; their heads being drawn up, strike the ground with the whole weight of the body. Horses that have their heads drawn up tightly should not have the bitting on more than fifteen or twenty minutes at a time.

HOW TO SADDLE A COLT.

The first thing will be to tie each stirrup-strap into a loose knot to make them short, and pre-

vent the stirrups from flying about and hitting him. Then double up the skirts and take the saddle under your right arm, so as not to frighten him with it as you approach. When you get to him rub him gently a few times with your hand, and then raise the saddle very slowly, until he can see it and smell and feel it with his nose. Then let the skirt loose, and rub it very gently against his neck the way the hair lies, letting him hear the rattle of the skirts as he feels them against him, each time getting a little further backward, and finally slipping it over his shoulders on his back. Shake it a little with your hand, and in less than five minutes you can rattle it about over his back as much as you please, and pull it off and throw it on again, without his paying much attention to it.

As soon as you have acustomed him to the saddle, fasten the girth. Be careful how you do this. It often frightens the colt when he feels the girth binding him, and making the saddle fit tight on his back. You should bring up the girth very gently, and not draw it too tight at first—just enough to hold the saddle on. Move him a little, and then girth it as tight as you choose, and he will not mind it.

You should see that the pad of your saddle is all right before you put it on, and that there is nothing to make it hurt him, or feel unpleasant to his back. It should not have any loose straps on the back part of it, to flap about and scare him. After you have saddled him in this way, take a switch in your right hand to tap him up with, and walk about in the stable a few times with your right arm over your saddle, taking hold of the reins on each side of his neck with your right and left hands; thus marching him about in the stable until you teach him the use of the bridle and can turn him about in any direction, and stop him by a gentle pull of the rein. Always caress him, and loose the reins a little every time you stop him.

You should always be alone, and have your colt in some light stable or shed, the first time you ride him—the loft should be high so that you can sit on his back without endangering your head. You can teach him more in two hours' time in a stable of this kind, than you could in two weeks in the common way of breaking colts—out in an open place. If you follow this course of treatment you need not run any risk, or have any trouble in riding the worst kind

of a horse. You take him a step at a time, until you get up a mutual confidence and trust between yourself and horse. First teach him to lead and stand hitched; next, acquaint him with the saddle, and the use of the bit; and then all that remains is to get on him without scaring him, and you can ride him as well as any horse.

HOW TO MOUNT THE COLT.

First gentle him well on both sides, about the saddle and all over, until he will stand still without holding, and is not afraid to see you anywhere about him. As soon as you have him thus gentled, get a small block, about one foot or eighteen inches in height, and set it down by the side of him, about where you want to stand to mount him; step up on this, raising yourself very gently. Horses notice every change of position very closely, and if you were to step up suddenly on the block it would be very apt to scare him; but by raising yourself gradually on it, he will see you without being frightened, in a position very nearly the same as when you are on his back.

As soon as he will bear this without alarm, untie the stirrup-strap next to you, and put your

left foot into the stirrup, and stand square over it, holding your knee against the horse, and your toes out, so as not to touch him under the shoulder with the toe of your boot. Place your right hand on the front of the saddle, and on the opposite side of you, taking hold of a portion of the mane and the reins, as they hang loosely over his neck, with your left hand; then gradually bear your weight on the stirrup, and on your right hand, until the horse feels your whole weight on the saddle. Repeat this several times, each time raising yourself a little higher from the block, until he will allow you to raise your leg over his croup, and place yourself in the saddle.

There are three great advantages in having a block from which to mount. First, a sudden change of position is very apt to frighten a young horse who has never been handled; he will allow you to walk up to him, and stand by his side without scaring at you, because you have gentled him to that position; but if you get down on your hands and knees and crawl toward him, he will be very much frightened; and upon the same principle, he would be frightened at your new position if you had the power to hold your-

self over his back without touching him. The first great advantage of the block, then, is to gradually gentle him to that new position in which he will see you when you ride him.

Secondly, by the process of leaning your weight in the stirrup, and on your hand, you can gradually accustom him to your weight, so as not to frighten him by having him feel it all at once. And, in the third place, the block elevates you so that you will not have to make a spring in order to get upon the horse's back, but from it you can gradually raise yourself into the saddle. When you take these precautions, there is no horse so wild but that you can mount him without making him jump. When mounting, your horse should always stand without being held. A horse is never well broken when he has to be held with a tight rein when mounting; and a colt is never so safe to mount as when you see that assurance of confidence, and absence of fear, which cause him to stand without holding.

An improved plan of mounting is to pass the palm of the right hand on the off-side of the saddle and, as you rise, lean your weight on it; by this means you can mount with the girth loose; or without any girth at all.

HOW TO RIDE A COLT.

When you want him to start do not touch him on the side with your heel, or do anything to frighten him and make him jump. But speak to him kindly, and if he does not start pull him a little to the left until he starts, and then let him walk off slowly, with the reins loose. Walk him around in the stable a few times until he gets used to the bit, and you can turn him about in every direction and stop him as you please. It would be well to get on and off a good many times until he gets perfectly used to it before you take him out of the stable.

After you have trained him in this way—which should not take you more than one or two hours —you can ride him anywhere you choose without ever having him jump or make any effort to throw you.

When you first take him out of the stable be very gentle with him, as he will feel a little more at liberty to jump or run, and be a little easier frightened than he was while in the stable. But after handling him so much in the stable he will be pretty well broken, and you will be able to manage him without trouble or danger.

When you first mount him take a little the

shortest hold on the left rein, so that if anything frightens him you can prevent him from jumping by pulling his head round to you. This operation of pulling a horse's head round against his side will prevent any horse from jumping ahead, rearing up, or running away. If he is stubborn and will not go, you can make him move by pulling his head round to one side, when whipping would have no effect. And turning him around a few times will make him dizzy, and then, by letting him have his head straight, and giving him a little touch with the whip, he will go along without any trouble.

Never use martingales on a colt when you first ride him; every movement of the hand should go right to the bits in the direction in which it is applied to the reins, without a martingale to change the direction of the force applied. You can guide the colt much better without it, and teach him the use of the bit in much less time. Besides, martingales would prevent you from pulling his head round if he should try to jump.

After your colt has been ridden until he is gentle and well accustomed to the bit, you may find it an advantage, if he carries his head too

high or his nose too far out, to put martingales on him.

You should be careful not to ride your colt so far, at first, as to heat, worry, or tire him. Get off as soon as you see that he is a little fatigued; gentle him, and let him rest; this will make him kind to you, and prevent him from getting stubborn or mad.

TO BREAK A HORSE TO HARNESS.

Take him in a light stable, as you did to ride him; take the harness and go through the same process that you did with the saddle, until you get him familiar with it, so that you can put it on him and rattle it about without his caring for it. As soon as he will bear this, put on the lines, caress him as you draw them over him, and drive him about in the stable till he will bear them over his hips. The lines are a great aggravation to some colts, and often frighten them as much as if you were to raise a whip over them. As soon as he is familiar with the harness and the lines, take him out and put him by the side of a gentle horse. Always use a bridle without blinkers when you are breakiug a horse to harness.

Lead him to and around a light sulky or pha-

eton; let him look at it, touch it with his nose, and stand by it till he does not care for it; then pull the shafts a little to the left and stand your horse in front of the off-wheel. Let some one stand on the right side of the horse and hold him by the bit, while you stand on the left side, facing the sulky. This will keep him straight. Run your left hand back and let it rest on his hip, and lay hold of the shafts with your right, bringing them up very gently to the left hand, which still remains stationary. Do not let anything but your arm touch his back, and, as soon as you have the shafts square over him, let the person on the opposits side take hold of one of them, and lower them very gently to the shaft-bearers. Be very slow and deliberate about hitching; the longer time you take the better, as a general thing. When you have the shafts placed shake them slightly, so that he will feel them against each side. As soon as he will bear them without scaring, fasten your traces, etc., and start him along very slowly. Let one man lead the horse, to keep him gentle, while the other gradually works back with the lines till he can get behind and drive him. After you have driven him this way a short distance, you can get

into the sulky, and all will go right. It is very important to have your horse go gently when you first hitch him. After you have walked him awhile there is not half so much danger of his scaring. Men do very wrong to jump up behind a horse to drive him as soon as they have him hitched. There are too many things for him to comprehend all at once. The shafts, the lines, the harness, and the rattling of the sulky, all tend to scare him, and he must be made familiar with them by degrees.

WARRANTY.

In the purchase of a horse the buyer should take, with the receipt, what is termed in law a warranty. The best way of expressing it is in this form:

NEWARK, N. J., August 1, 18—.

Received of S. E. Ryman three hundred dollars, for a black mare, warranted only five years old, sound, free from vice, and quiet to ride and, drive.

$300. R. M. ROSS.

A receipt which includes simply the word "warranted," extends merely to soundness. "Warranted sound," has no greater extent; the

age, freedom from vice, and quietness to ride and drive should all be especially named. This warranty embraces every cause of unsoundnsss that can be detected, or that is inherent in the constitution of the animal at the time of sale, as well as every vicious habit which he has previously shown. In order to establish a breach of the warranty, and then be enabled to return the horse or recover the price paid, the purchaser must prove that it was unsound or viciously disposed at the time of sale. In case of cough, the horse must have been heard to cough previously to the purchase, or as he was led home, or as soon as he had entered the stable of the purchaser. Coughing, even on the following morning, will not be sufficient; for it is possible that he might have caught cold by a change of stabling. If he is lame, it must be proved to arise from a cause that could not have occurred after he was in the purchaser's possession. No price will imply a warranty, or be deemed equivalent to one; the warranty must be expressly stated.

A fraud in the seller must be proved, in order that the buyer may be enabled to return the horse or maintain an action for the price. The

warranty should be given at the time of sale. A warranty, or a promise to warrant the horse, given at any period previous to the sale, is of no effect; for the horse is a very perishable commodity, and his constitution and his usefulness may undergo a considerable change in a few days. A warranty after the sale is also of no effect, as it is given without any legal consideration. In order to complete the purchase, there must be a transfer of the animal, or a written memorandum of agreement, or the payment of some sum, however small, as earnest-money. No verbal promise to buy or sell is binding without one of these accompaniments; and the moment either of them is effected, the legal transfer of property, or its delivery, is made, and whatever may happen to the horse, the seller retains, or is entitled to, the money. If the purchaser exercises any act of ownership—as by using the animal without leave of the seller, or by having any operation performed upon him, or medicines given to him—he makes him his own.

If the horse should afterwards be discovered to have been unsound at the time of warranty and sale, the buyer may return him. Although not legally compelled to give notice to the seller

of the discovered unsoundness, it is best that such notice should be given. The animal should then be tendered at the house or stable of the seller. If he refuses to receive the animal, humanity dictates that he should be sent to a livery stable, in preference to tying him up in the street; an action can be maintained, after the horse has been tendered, for the necessary expenses of keeping him as well as for the price paid. The keep, however, can be recovered only for the time that necessarily intervened between the tender and the determination of the action. It is not legally necessary to return the animal as soon as the unsoundness is discovered. The animal may be kept for a reasonable time afterwards, and even proper medical means may be resorted to for the removal of the unsoundness; but courtesy, and indeed justice, will require that the notice should be given as soon as possible.

HORSE SHOEING.

When the delicacy of organization of the foot is considered—its extreme sensitiveness and wonderful adaptability for the purpose of locomotion, the enormous wear and tear incident

upon the constant use in the service of man, its liability to abuse and injury, and the consequent suffering of the dumb animals, and pecuniary loss to the owner—it is surprising that there has been so little real improvement in the art. While the past half century has been so fruitful of results in almost every other branch of industry, it has witnessed few in this. This is due in a great measure to the indifference of the artisan to whom the care of the horse's foot is committed, who, ignorant of the nature and structure of the living member before him, so recklessly handles and mutilates it, in much the same manner as his ancestors years before him.

The feet of most of the horses of the present day, and especially those used for draught purposes and heavy work in our large cities, are in bad condition. A healthy, vigorous foot is the exception, even among horses used for lighter work. Brittle, shelly hoofs, ridged and dished, indicating internal derangement; withered frogs, with the centre arch or stay entirely absorbed, high heels bound up by hard, unyielding crust, all these deformities and many others are chargeable in some degree to bad shoeing. Sometimes injuries are attributed to the blacksmith that are

due to accident or the brutality of the driver. Veterinarians may propose theories, but lack the practical experience and opportunities of observation which the workman alone can have, while the number of the latter who have combined scientific education with a thorough knowledge of the detail of their profession, has been too small to stamp any decided character upon it. The question then presents itself, why not teach the mechanic the design of the structure, to the repair of which his lifetime is devoted.

The operation of paring out the horse's foot is a matter requiring both skill and judgment, and is, moreover, a work of some labor when properly performed. It will be found that the operator errs much oftener by removing *too little* than too much; at least it is so with the parts which ought to be removed, which are almost as hard and unyielding as flint, and, in their most favorable state, require considerable exertion to cut through.

No general rule can be given applicable to the paring out of the feet of all horses, or even of the feet of the same horse at all times. It would be evidently unwise, for example, to pare the sole as thin in a hot, dry season, when the roads are

broken up, and strewed with loose stones, as would be proper in a moderately wet one, when the roads are well bound and even; for, in the case first named, the sole is in constant danger of being bruised by violent contact with loose stones, and therefore needs a thicker layer of horn for its protection; while the latter case offers the most favorabe surface that the greater part of our horses ever have to travel upon, advantage of which should be taken for a thorough paring out of the sole, in order that the internal parts of the foot may derive the full benefit accruing from an elastic and descending sole; a condition of things very essential to the due performance of their separate functions. To take another illustration: horn grows very freely, especially toward the toe, in horses with upright feet and high heels, and such are always benefitted by having the toe shortened, the heels lowered and the sole well pared out; whereas, in horses with flat feet and low heels, horn grows sparingly, and the toe of such feet being always weak, admits of very little shortening. Such heels being already too low, they should scarcely be touched with the rasp; and the sole presents such a small quantity

of dead horn, that the knife should be used with great discretion.

The corners formed by the junction of crust and bars should be well pared out, particularly on the inside; for this is the common seat of corn, and any accumulation of horn in this situation must increase the risk of bruising the sensitive sole between the inner part or heel of the coffin bone and the horny sole. Little, if anything, is gained by allowing the bars to project beyond the surface of the sole. The power of resisting contraction cannot possibly be increased by this arrangement, and the projecting rim is left exposed to the danger of being broken and bruised by contact with stones and other hard substances; and the method is further attended with the disadvantages of making the cleaning out of these corners a work of considerable ingenuity with so unweildy an instrument as a common drawing knife. It is much preferable to pare them down to a level with the sole, or very nearly so; avoiding, however, every approach to what is styled "opening out the heels," a most reprehensible practice, which means cutting away the sides of the bars so as to show an apparent increase of width between the heels,

which may, for the time, deceive the eye, but is in reality a mere deception, purchased at the expense of impaired powers of resistance in the bars and ultimate contraction of the feet. It is palpable that the removal of any portion from the sides of the bars must diminish their substance, and render them weaker, and consequently less able to resist contraction.

The frog should never be cut or pared, except in very rare cases of horses with unusually fast-growing frogs. The first stroke of the knife removes the thin horny covering altogether, and lays bare an under surface, totally unfitted, from its moist, soft texture, for exposure, either to the hard ground or the action of the air, in consequence of which exposure it soon becomes dry and shrinks; then follow cracks, the edge of which, turning outward forms rags; these rags are removed by the smith at the next shoeing, by which means another similar surface is exposed, and another foundation laid for other rags; and this process continues, until finally the protruding, plump, elastic cushion, interposed by nature between the navicular joint and the ground, and so essential to its preservation from injury, is converted—by this senseless inte er-

ence—into the dry, shrunk, unyielding apology for a frog, to be seen in the foot of almost every horse that has been regularly shod for a few years. The frog is provided within itself with two very efficient modes of throwing off any superfluous horn with which it may be troubled, and it is very unwise in man to interfere with them. The first and most common of these modes is the separation from the surface of the frog of small, bran-like scales, which becoming dry, fall off in a kind of whitish scurf; the other, which is upon a large scale, and of rare occurrence is sometimes called "casting the frog." A thick layer of frog separates itself in a body, and shells off as deep as a common paring with a knife; but this very important difference is to be noted between the two operations—that nature never removes the horny covering until she has provided another horny covering beneath, so that although a large portion of frog may have been removed there still remains behind a perfect frog, smaller, it is true, but covered with horn and in every way fitted to sustain exposure; while the knife, on the contrary, removes the horny covering but is unable to substitute any other in its stead. The frog should therefore be left to

itself. Nature will remove the superfluous horn, and the rags do no harm, since, if they are unmolested they will soon wholly disappear. Mind that the shoe is intended for the foot, and not the foot for the shoe, and that it is therefore peculiarly proper to make the shoe to fit the natural form of the foot, instead, as is often the case, of paring, burning and rasping the foot until it fits the shoe, which is made according to the smith's notion of what the form of the horse's foot should be. No amount of paring can bring the foot of a horse to an unnatural figure, and also leave it sound and safe for use.

The truth really is, that the shape of the shoe cannot by any possibility influence the shape of the foot; for the foot being elastic, it expands to the weight of the horse in precisely the same degree, whether it is resting upon the most open or the most contracted shoe. It is the situation of the nails and not the shape of the shoe that determines the form of the foot. If the nails be placed in the outside quarter and toe, leaving the heels and quarters on the inside—which are the most expansive portions—free, no shape which we can give to the shoe can of itself change the form of the foot. It must not, however, be in-

ferred from this, that the shape of the shoe is therefore of no importance; quite the contrary being the case, as has been already shown. As the shape of the foot is in no degree changed by the form of the shoe, that form should manifestly be adopted which produces the greatest number of advantages with fewest disadvantages. A small clip at the point of the toe is desirable, as preventing displacement of the shoe backward. It need not be driven up hard, as it is simply required as a check or stay. The shoe should be sufficiently long to fully support the angles at the heels, and not so short—as is too often the case —that a little wear imbeds the edge of it in the horn at these parts.

The foot surface of the shoe should always have a good, flat, even space left all around for the crust to bear upon; for it must be remembered that the crust sustains the whole weight of the horse, and should therefore have a perfectly even bearing everywhere around the shoe.

Before removing the old shoes care should be taken to raise all the clinches of the nails to prevent injury to the crust, and to avoid giving pain to the horse; even after clinches are raised, if the shoes cannot be easily drawn off, those nails

which seem to hold most firmly should be punched, or drawn out, that the shoe may be removed without injury to the hoof, and without weakening the nail-hold for the new shoeing.

The shoe being removed, the edge of the crust should be well rasped to remove so much of the horn as would have been worn away by the contact with the ground, had it been unshod. In no case should the rasp be used on the surface of the hoof, except to make the necessary depressions for the clinches, after the new shoe has been put on, and to shape the hoof *below* the line of the clinches of the nails. The hoof, above this line, will inevitably be injured by such treatment, which is one of the most fruitful sources of brittleness of the horn, which often results in "sand-crack."

In fitting the shoe on the foot, it should never, while red-hot be burned into its place, as this would so heat the sensitive sole as to produce a serious derangement.

It is a certain fact that by burning, a crust will form on the bottom of the foot that will eventually crumble off, and in a very short time the shoe will become loose. And this is not all—the hot iron will cause contraction of horn,

which the reader will readily remember if he has ever placed horn against hot iron and noticed the manner in which it will curl.

The shoe having been so fitted that the foot exactly touches it in every part, the next step is to nail it fast to the hoof.

Upon the number and situation of the nails which secure it depends the amount of disturbance that the natural functions of the foot are destined to sustain from the shoe. If the nails are numerous and placed back in the quarters and heels, no form of shoe, however perfect, can save the foot from contraction and navicular disease.

If, on the contrary, they are few and placed in the outside quarter and toe, leaving the inside quarter and heels free to expand, no form of shoe is so bad that it can, from defective form alone, produce contraction of the foot.

The fear, very commonly entertained, that a shoe will be cast almost at every step, unless it is held to the foot by eight or nine nails driven high up into the crust, is utterly groundless, as both theory and practice concur in asserting. If the presence of a nail in the crust were a matter of no moment, and two or three more than are necessary were merely useless, no great reason

would exist for condemning the common practice of using too many nails; but it is far otherwise; the nails separate the fibres of the horn, which never by any chance become united again, but continue apart and unclosed, until by degrees they grow down with the rest of the hoof, and are finally, after repeated shoeings, removed by the knife.

If the clinches chance to rise, they must be at once replaced, as such rising imparts to the nails a freedom of motion which is certain to enlarge the size of the holes; and this mischief is often increased by the violent wrenching from side to side which the shoe undergoes in the process of removal by the smith. As these holes cannot possibly grow down and be removed under three shoeings, it will be found that even with seven nails the crust must always have twenty-one of these separations existing in it at the same time; and as they are often from various causes extended into each other, they necessarily keep it in a brittle, unhealthy state, and materially interfere with the security of the future nail-hold.

Before leaving this subject it should be remarked, that contracted feet—that is, feet that

have shrunken and become narrow at the heels, and of which the frog has become materially reduced in size—are often, and doubtless most frequently, caused by inflammation arising from improper shoeing. In such cases, and often when horses are lame in the foot from other causes, the horseshoer will pinch and punch the horse in the shoulder until from pain the horse responds, then he will look with pride and say that is where the lameness is.

The foot is a very finely constructed affair, subject at all times to contusions, bruises and accidents, which causes it to be much more liable to lameness than the broad shoulder with its heavy bones and large, strong muscles.

It is the custom of many blacksmiths to "set the shoes well off at the heels," and to carry the seating or the level of the upper side of the shoes so far back that the heels, instead of resting on a flat surface—as they would on a properly fitted shoe—rest on the slopes of the seating, which are in this respect simply two inclined planes, so placed that, at each step taken by the horse, his heels must be pressed together, until a greater or less contraction is made manifest, but at too late a period to enable us to remedy the evil; for

there is no means by which this contraction of the foot can be cured—although, when it exists only to a slight extent, the internal portions of the foot will sometimes accomodate themselves to its new form. So far as disease is the result of bad shoeing, it can be obviated by so forming the shoe that it will afford a sufficient and perfectly secure and level support for the heels.

If we carefully observe the form and size in the frog in the foot of a colt of from four to five years old, at its first shoeing, and then note the changes which it undergoes as the shoeings are repeated, we shall soon be convinced that a visiible departure from a state of health and nature is taking place. At first it will be found large and full, with considerable elasticity; the cleft oval in form, open, and expanding, with a continuous, well-defined, and somewhat elevated boundary; the bulbs at the heels fully developed, plump and rounded; and the whole mass occupying about one-sixth of the circumference of the foot. By degrees the fullness and elasticity will be observed to have diminished; the bulb at the heels will shrink, and lose their plumpness; the cleft will become narrower, its oval form disappear, the back part of its boundary give way.

and it will dwindle into a narrow crack, extended back between the wasted, or perhaps obliterated, bulbs, presenting only the miserable remains of a frog, such as may be seen in the feet of most horses long accustomed to be shod.

QUARTER CRACK AND TOE CRACK.

The author has never failed to cure either of these troubles if his advice was followed. Draw lines from the hair to the crack, about one to one and one-half inches long, in the shape of a V, on each side of the crack. Cut well down so that the bottom of the groove bleeds; then touch the top of the crack at the hair with a red hot iron, and give the V shaped pieces a chance to bulge —which they will do in a few days.

There is a set of instruments for closing quarter cracks, which consists of a tool for making mortices on each side of the crack in the wall of the foot, a clamp, and a powerful pair of forceps for compressing the end or point of the clamps into the hoof.

The author has used these instruments in a number of cases with complete success for holding the hoof together below the V shaped pieces. It has also been his practice to keep the horse

shod with good bar shoes, and use plenty of HUMPHREY'S GILT EDGE HOOF OINTMENT, to promote the growth of the horn.

Veterinary Surgeon F. P. Robergeo, at 1741 Broadway, New York, is the inventor of a steel spring, known as Robergeo's Hoof Expander, that does away with the clamp on the patient's foot, and the author has been informed by those who have used both methods, that the spring is preferable to the method he has given, and advises its use. In cases of contraction of the feet these springs are superior to anything ever invented, without a doubt, and persons using them will find the Gilt Edge Hoof Ointment very beneficial for softening and promoting the growth of the foot.

FORGING.

Forging is caused by the hind foot being thrown forward and striking against the bottom of the shoe of the fore foot, before it can get out of the way. The only way to overcome this trouble is to increase the action of the horse in front, and retard the action of the hind limbs. The proper way to obviate this trouble is by using light shoes in front, slightly raising the

heel, to give the foot a chance to get off of the ground sooner.

Do not cut the toe of the hind foot; make the hind shoe so that it will extend pretty well behind. Make the projecting portion heavy, and let the foot project a little over the toe of the shoe.

PRICKED.

Prick of the foot is an injury caused either by the horse picking up a nail, or an accident of this kind may happen while the horse is being shod. The horseshoer may or may not be to blame; but it might happen without any carelessness on his part, that a nail will split or take a direction entirely different from the one he had reason to expect. If the nail splits a large portion comes out of the horn in a proper manner; it is possible that a small section may penetrate the sensitive laminæ. The horseshoer could not notice that a small portion of the nail had not come out. When such an accident happens, if there is any part of the nail left in the foot, get it out at all hazards. Make a good free opening in the foot, until the blood starts freely. Then pour into the parts a few drops of muriatic acid,

or turpentine, dress the sore with HUMPHREY'S GILT EDGE HOOF OINTMENT, or pine tar and oakum. Tack on the shoe; every night stuff the foot with oil meal. As a rule the author does not advise working lame or sick horses, but in cases of prick of the foot the animal will generally do much better to be kept at work, even if he is lame, than he will standing in the stable. It may be necessary to take the shoe off, from time to time, to let any puss escape that might be penned up.

TO PREVENT INTERFERING.

For a horse that interferes in front, artistic shoeing as a rule is of little or no avail; among horsemen they are called nigger footed horses, and a man that has owned one of them is sure never to purchase another, for they are of very little or no value. A horse may interfere behind when he is first brought from the country and first commences to travel on the city pavements; but with proper shoeing he will soon stop it. The horse that interferes behind should have his foot properly leveled, cutting away the horn, slightly lowering the outside of the foot, to throw the ankle out, thereby giving the opposite foot a chance to

pass. Do not disfigure the foot. Weight the outside of the shoe and raise the inside of the foot by making the inside of the shoe the thickest. If a horse should interfere after shoeing, put more weight on the outside of the shoe; do not put more than two nails on the inside of the shoe, and those near the toe. The horn on the inside should be left to project a trifle over the outside of the shoe. It will probably take two or three shoeings to stop the horse from interfering behind.

WATER.

The watering of the horse is a very important but disregarded portion of his general management, especially by the farmer. He lets his horses loose morning and night, and they go to the nearest pond or brook and drink their fill, and no harm results; for they obtain that kind of water which nature designed them to have, in a manner prepared for them by some unknown influence of the atmosphere, as well as by the deposition of many saline admixtures.

With working or road horses in cities, not having an opportunity to go to the brook or pond, the important question of water is easily

settled. Give them a little at a time, as often as you see fit; but never less than three times a day.

PINK EYE.

In the spring and fall especially—oftener in the spring—the disease known as pink eye is most prevalent. It is in all probability caused by some peculiar atmospheric influences which exercise an injurious effect upon the animal. This may be said to be the exciting cause; but there are many other influences which may produce the disease. Ill-ventilated stables, or the horses not receiving a sufficient supply of wholesome, nutritive food, may produce it. It more frequently occurs in large cities, and especially in New York, where it can be found any time of the year. Experience teaches us that, if animals are compelled to breathe impure air, and have not sufficient exercise, they are more liable to contract this disease. But all are subject to it.

Various names are given to this disease: influenza, distemper, catarrhal fever, epizootic, and epidemic catarrh.

At some periods the disorder will run through entire stables; at others it will attack them "piece-

meal," and in situations where no connection can be traced.

I have never taken particular caution to prevent its spreading, but it is certainly better to separate the infected, if possible, from well horses.

SYMPTOMS.

Considering the disorder as produced at seasons of the year when horses are naturally weak, in consequence of this being the time they are shedding their coats, and taking into account the situation, in its simplest form it bears some resemblance to common fever; though there are still strong characteristic distinctions between the diseases.

To a practitioner, the look—the eye at once betrays the malady. Either it exhibits that woe-begone aspect which extreme depression might give; or else its upper lid, instead of being simply dependent is nearly closed, while the eyelid on the inner side is of a very slight or yellowish-red color; the head appears to hang from, rather than supported by the neck. The coat looks dull, having lost its gloss. The extremities —ears and legs—are cold; but the mouth dry, hot

and feverish. The pulse is accelerated, but very weak. The respiration undisturbed. The dung is voided in small qauntities. The urine scanty, and passed with difficulty. The horse cannot be induced to look at food, but turns from it as though he despaired of possible recovery.

It is impossible to lay down any absolute line of treatment. Where debility is marked the treatment must be very mild and excessively cautious. Where the disorder, however, appears with customary tone, and exhibits some strength to stand active measures, it is well to be particularly careful as to the mode of treatment. There exists no apparent disturbance of the breathing, at least not enough to create alarm.

Other symptoms often present themselves with the foregoing. Cerebro-spinal meningitis may be produced, so that you will have various forms of this disease. In other cases the breathing is very much affected, which is perhaps more perceptible at the nostrils than at the flank. The throat is sore. The bronchial tube soon becomes involved, and you hear a peculiar noise by placing the ear against the throat.

Many cases exhibit *catarrhal* symptoms; that is, the membrane of the nose is reddened and

from the nostrils is poured out a yellow viscid matter. This matter is generally of a yellowish, but in some cases turns to a greenish hue. The general temperature of the body may be increased to 105°.

On other occasions the disorder commences with *vertigo*; the brain is attacked—so when the animal walks out he staggers and can hardly keep his legs.

An accompaniment of pink eye is swelled legs. The author considers this a good symptom, and when this appears he thinks the patient's chances for recovery are very much improved.

TREATMENT.

Pure air is the first great consideration—and plenty of it. Turn the animal loose, if possible in a box stall, rather than keep in a close stable. Use covering according to the season ; rub the legs well and keep the blood in circulation ; bandage the legs ; support the system and depend, to a great measure, upon nature for the rest; as this disease must have its run, despite of all medicine.

Provided you see the case in its early stages, give the animal every morning and evening alter-

nately, HUMPHREY'S VETERINARY FEVER REMEDY and HUMPHREY'S VETERINARY NERVE REMEDY, and one-half pint of milk. Use stimulants; give liquor acetate of ammonia, two and one-half ounces, sweet spirits of nitre one ounce, every noon; give ale or beer but don't over-feed. Get the bowels to act by giving injections; in some cases it may be necessary to administer a laxative of either one-half pint raw linseed oil, or two or three drachms of aloes. Do not push this treatment too far, for fear of super-pergation. If the throat is sore keep it well bathed with HUMPHREY'S GOOD SAMARITAN, or apply mustard—but the former is preferable and most effective.

As the animal shows signs of convalescence—the eye clear, the pulse firmer, and returning appetite, body and limbs more of a natural temperature, etc., give HUMPHREY'S CONDITION POWDER. This treatment comes as near being absolute as any yet discovered.

PURPURA HEMORRHAGICA.

The cause of this terrible malady is some putrid condition or a charbonous affection of the blood. The skin and mucous membrane,

and it is quite possible, that many parts of the body may be affected. The attack is sudden. The body, head and limbs enlarge; consciousness is partially lost. The horse stands and the breathing is quickened. Through the skin there exudes serum with blood. The nostrils and lips enlarge, and part of the swollen tongue protrudes from the mouth. The appetite is not quite lost, although deglutition (swallowing) is difficult. Thirst is great. There is generally no trouble in detecting this disease at the start. There will be a slight swelling of the limbs that will possibly disappear by exercise—but it will shortly return. The swelling is very sudden and surprising. Such a swelling means symptoms of purpura. Exudation (discharge of bloody matter) takes place. On a white limb you can see red spots from which the liquid is oozing. Small vescicles (bladders on the skin) appear on the limb and also in the mucous membrane. The mucous membrane of the nose may become a mass of corrupt matter. There will be a peculiar dropsical swelling, which may first show itself in connection with the eye. It is necessary to watch the case closely for fear of sloughing (a dropping out of the skin and flesh).

Purpura is, in all probability, the sequel to some other disease, due to poison in the blood, which causes the blood to be more fluid and destroys coagulation (curdling) to a certain extent. It is due more frequently to bad ventilation, bad drainage, etc., than any other cause.

TREATMENT.

Place in comfortable quarters, where the patient can get plenty of fresh air, and bathe the nostrils with cold water. Local remedies will benefit the patient but little; give good, nutritive food, but not enough to over-load the stomach; give HUMPHREY'S VETERINARY BLOOD REMEDY as directed; give one-half ounce chlorate of potash in the water, three times a day; if the bowels are constipated give one of HUMPHREY'S PHYSIC BOLLS. You may also give for this disease, two ounces of spirits of turpentine blended with two eggs, and repeat it in two days. If the patient is likely to die of suffocation call a veterinary surgeon to perform tracheotomy, (incision into the windpipe,) which will afford temporary relief; but the final recovery will be doubtful, if the horse is bad enough off to require such treatment.

COLIC.

The premonitory symptoms are sudden in their nature. The animal is first observed pawing violently, showing evident symptoms of great distress, shifting his position almost constantly, and manifesting a desire to lie down. In a few minutes these symptoms disappear, and the animal is again easy. But the same uneasiness again returns, increasing in severity until the animal cannot be kept upon his feet; the pulse is full—but scarcely altered from the normal standard. As the disease advances, the symptoms become more severe, the animal at times throwing himself with great force upon the ground, as though he were shot, looking anxiously at his sides, sometimes snapping at them with his teeth, and striking his belly with his hind feet. The symptoms vary but little from those of inflammation of the bowels, the condition of the pulse and the remission of pain being the distinguishing features. The extremities are of a natural temperature; there are frequent but ineffectual efforts to stale, and a cold sweat bedews the body.

More horses die from colic, caused by indigestion, than from any other disease. More horses die

while having colic by being over-doctored than die for want of treatment. It is a singular fact that nine men out of ten who see a sick horse know just what will cure him; but let one of their own horses get sick and they don't know anything that is good for him. Don't take any of their advice. If your horse has colic do as directed in this work, and your horse has all the medicine he needs.

Flatulent colic is an accumulation of gas in the stomach and intestines, occurring more often in the spring and fall than at any other season. Horses fed on corn are most subject to these attacks, in consequence of this kind of food fermenting readily in the stomach, more particularly when green. If the accumulation of gas thereby occasioned is not arrested, it soon swells the stomach and intestines to such an extent as to cause the diaphragm, or walls of the stomach, to give way, and death of the animal ensues. The author has known cases to terminate in death in less than half an hour from the observation of the first symptoms, so rapid is the course of this disease. The symtoms are the same as in spasmodic colic, with the exception of the swelling of the abdomen. I have had remarkable

success by using HUMPHREY'S CELEBRATED COLIC CURE, and can safely recommend it.

When a horse has the colic he should be treated just as any intelligent physician would treat a human being. There is no necessity of pouring an entire drug store into the stomach of the horse, at the suggestion of knowing friends. The patient should be treated in a rational manner—by the same means and with the same skill as if one of our own race were concerned. It is cruel to see an animal trotted up and down the street, followed by a man, with whip in hand, when the horse is the subject of excruciating pains, and the sweat pouring off him like rain, from sheer agony. The custom is decidedly wrong. Reason confirms this opinion, and what reason teaches, man should endeavor to put in practice. No physician would dare advise a man to rise from a sick bed, and run up or down stairs, for if he did so he would very shortly find himself without practice.

If the patient is inclined to roll, by all means let him do so—on the ground, rather than in a narrow stall.

Give the patient a wide stall and plenty of bedding. Let him lie down, rise and tumble about

as much as he chooses; but watch and see that no accident happens him.

TREATMENT.

When there is swelling of the abdomen it is the writer's practice to make an opening in the flank on the right side, about three inches in front of the hip, at the thinnest place which can be found, by careful manipulation with the fingers, with a proper instrument known as the trocar and canula—an instrument about five inches long. This should be plunged through the flank with the point directed slightly towards the opposite shoulder. The stilletto is immediately withdrawn, and the tube allowed to remain until the formation of gas has ceased. If you get a watery discharge through the tube, you have an unfavorable symptom. This operation may be performed with perfect safety. If you have a proper instrument it is almost impossible for any unfavorable results to follow.

My own practice is to give in the first stages of colic, as a cathartic, one of HUMPHREY'S PHYSIC BOLLS, under the impression that by so doing I do not certainly detract from the power of other medicines in relieving the patient. HUMPHREY'S

CELEBRATED COLIC CURE, if used as directed, is as perfectly safe and reliable as any remedy that can be compounded, for a horse with colic. Every well-regulated stable should be always provided with this remedy; but, if by chance you have run short of it, give the patient sulphuric ether and laudanum, one ounce of each, in half a pint of water, once every two hours until relief is obtained; or you may give one-half ounce of chloral hydrate in one-half pint of water, every two hours. A good wisp of straw vigorously applied to the belly, flanks and limbs may be beneficial, as you thus preserve the equilibrium of circulation.

An *enema* of soap-suds should be administered often. If the patient does not retain the injection, but expells it as soon as you withdraw the syringe, it is considered a very unfavorable symptom. Mustard applied to the abdomen is very advantageous; about one-quarter of a pound will be sufficient. When convalescing, if the patient appears to have a fever, give HUMPHREY'S FEVER REMEDY as directed.

CEREBRO SPINAL MENINGITIS.

This disease in the horse generally appears to

the greatest extent among those breathing impure air, and receiving improper food. Several years ago this malady was almost unknown, but has of late become extensive among animals. The disease is comparatively new, as will be seen from the fact that, until recently, writers on veterinary surgery have failed to mention it. It is impossible to say what the exciting cause is, but enough is known about the disease to show that it is due to atmospheric influences, local causes, grass containing narcotic properties, vegetable poison, etc.

There has been in the flats and meadows of New Jersey many cases of cerebro spinal meningitis, supposedly caused by the miasmic gases prevailing in that particular district. It is actually a congestion, followed more or less by inflammatory action of the covering of the spinal cord and brain, due to a congested state of the blood vessel. The sympathetic system seems to be involved to some extent, perhaps to some noxious condition of the blood. Anything that is debilitating tends to produce it. It is more severe and fatal in crowded stables, especially when it assumes an epidemic form.

SYMPTOMS.

Sometimes it shows itself by loss of power, especially in the hind parts; the appetite is impared—or perhaps the animal cannot swallow—due to complete paralysis of the throat. Some show the brain to be affected, and others the spine. Death may ensue in twenty-four hours from the time you see the animal in apparently good health. The temperature is not changed to any great extent. In some cases it increases, in others decreases. In early stages the pulse is not materially changed, though it may be slower than natural. The horse is apt to fall or lie down, and is unable to rise.

This may be taken for *azoturia* or *vice versa*. The urine is not so dark as in *azoturia*.

Accompanying loss of power of the hind parts you will have brain disturbances, and a comatose state which, in a few hours, will be followed by delirium, which lasts in some cases until death. One symptom is paralysis of the throat, which gives some non-professional men the idea that the horse has diphtheria. It is the author's opinion, from long practical experience, that the disease known as diphtheria, has never actually existed among horses.

If you give the horse a pail of water he will pretend to drink; but if you watch, you will perceive that little, if any water, disappears. He is unable to drink, his bowels will be constipated, he has very little or no appetite, and extreme thirst. When he lies down, stretched out, he may kick with his hind feet, or paw with his fore feet. If he is down and unable to rise, prick his legs with a pin or the point of a knife; if he refuses to respond, his feeling in the parts is gone, and you may consider the case unfavorable.

My experience has been, when the disease assumed an epizootic form, that it came from the horse drinking water containing drainage from the stable, or water standing in pools in or about the place, or both.

TREATMENT.

To prevent the spreading of the disease and relieve congestion, blister the spinal column, and top of the head with HUMPHREY'S SPAVIN BLISTER. Apply the blister to the back from the top of the shoulder to the root of the tail. Give injection of soap-suds, or warm water and salt. Give HUMPHREY'S VETERINARY NERVE REMEDY as directed, and powdered *nux vomica*,

in one drachm doses, once a day. HUMPHREY'S GOOD SAMARITAN may be used with advantage to stimulate the limbs, by applying it, and giving the horse a thorough rubbing down. It may also be applied to the throat. Slings may be used, if the loss of power is so great that he cannot bear his weight on his limbs. If the loss of power is entire the case may be considered hopeless.

PNEUMONIA.

INFLAMMATION OF THE LUNGS.

By pneumonia, or inflammation of the lungs, is meant either a highly congested or an inflammatory condition of the lungs, arising from various causes, as close or badly ventilated stables, violent or extraordinary exercise, or sudden changes from heat to cold. Cold applied to the external surface of a heated animal drives the blood from the skin to the internal organs, often causing congestion of the lungs. Pulmonary diseases are more prevalent in the spring and fall, particularly if the weather is cold and damp.

This disease is generally ushered in by a shivering fit; the horse is sometimes attacked very suddenly. He refuses food.

The respiration becomes disturbed, sometimes suddenly, at other times more slowly; legs, ears and muzzle cold; cough sometimes present; staring coat; membrane of nose reddened or leadened-hued; the animal hangs his head in or under the manger, stands with his feet wide apart, remaining in one position, with no inclination to move. The pulse varies very much; it is sometimes full and quick, at other times weak and scarcely perceptible.

In these cases the ear is found of the greatest advantage in enabling one to detect to a certainty the true condition of the parts affected. If the attack is sudden—coming on after any violent exercise—and the pulse is quick, weak and scarcely perceptible, by the application of the ear to the animal's side the case is decided, in the absence of all sounds, to be one of congestive pneumonia.

When the disease assumes an inflammatory character, the breathing becomes disturbed, the mouth hot, flanks heaving, and the nostrils expand and contract violently. HUMPHREY'S SPAVIN BLISTERS must be applied to the sides and breast.

In these cases blood may be taken to good ad-

vantage. Bleed from the neck at least four quarts, after which place in a cool stall where he can get plenty of fresh air; place a pail of cool water before him. Give the patient, every four hours, HUMPHREY'S FEVER REMEDY, in full-sized doses. Use this treatment until the beating of the pulse diminishes, then give twice a day, HUMPHREY'S VETERINARY NERVE REMEDY in one-half pint of milk. Give frequent injections of soap-suds or warm water and salt.

The horse should be kept on a low diet for a few days, as bran mashes, carrots, or green food; but no hay should be allowed, and a pail of water should be kept before him.

When the horse is convalescing give HUMPHREY'S CONDITION POWDER as directed.

CORNS.

The first effect of contraction of the hoof is to bruise the sensitive parts within their horny limits at that part of the foot formed by the crust and bar, causing lameness, which may be acute or chronic. These bruises are commonly called corns. The reason why this portion of the foot should be so severely bruised is obvious. The crust and bar forming a triangular space be-

tween which a considerable portion of the sensitive laminæ lie, this bar by its resistance of the encroachments of the crust, causes a two-fold pressure upon the sensitive parts, acting much as a vice, and thereby diminishing the triangular space. Upon examination of the foot the horn is found hard, dry and brittle, with a strong tendency to crack on very slight concussion. On removing a portion of the horn at the part of the foot indicated, the parts are found to be contused, sometimes slightly, and at others severely. In the latter case the feet are in such a condition as to require prompt attention, or discharge of matter may take place, forming a sinus, or pipe-like opening, through the quarter, sometimes passing through the coronet, and producing a condition or disease known as quitter, which often terminates in permanent lameness and deformity.

When the lameness is of a chronic character, the poor beast, owing to his deprivation of speed, is compelled to suffer.

By way of treatment, the hoof around the corn should be cut away so as to prevent pressure from the shoe; the corn should be well cut out, and muriatic acid applied. He should then be

carefully shod, and, if the frog is elastic, a bar shoe, nicely fitted, with a perfectly level bearing, would be best; if, however, the frog is hard and unyielding, such a shoe may prove injurious. Flax-seed poultices frequently applied to the feet, together with the use of HUMPHREY'S GILT EDGE HOOF OINTMENT, will be found effectual; a run at grass, without shoes, will also prove beneficial.

GLANDERS.

This fatal and much-dreaded disease has baffled the efforts of veterinary surgeons in times gone by and still continues to do so. It is, without a doubt, contagious; yet, as different diseases are confounded with it, which may be detected by the competent practitioner, no animal should be condemned until symptoms peculiar to glanders—which cannot well be mistaken, if the disease is fully developed—have manifested themselves. The suspected animal should be removed and kept from all possible contact with any others.

It is necessary for the attendant to use the utmost caution when around a glandered horse, as the disease is freely communicated from the animal to man by inoculation.

The most common cause of this disease is the

impure air of close, ill-ventilated and filthy stables, which acts injuriously upon the organs of respiration, destroys the constitution, debilitates the system, and renders it susceptible to the attacks of disease. Neglected catarrh, also, sometimes terminates in glanders; hard work and bad food, together with sudden changes from exposure to cold and wet weather to hot stables, are likewise reckoned among the causes.

The symptoms are: discharges from one or both nostrils of a glossy, thick, gluey nature, frequently sticking about the nostrils in considerable masses. This is a peculiarity which other discharges do not possess. This discharge is not always copious, as is generally supposed. The Schneiderian membrane of the nose changes to a dusky, or dirty yellow, or leaden hue; ulcers appear upon the membrane; a peculiar raising of the nasal bones will be observed, which the author has never noticed in any other disease; the discharge is sometimes mixed with blood, and is often fetid; and one or both of the submaxilliary glands are swollen and adhere to the jawbone. Too much reliance, however, should not be placed upon this swelling, as it frequently accompanies other diseases; but the character of

the discharge, and the raising of the nasal bones are peculiarities not easily mistaken when the disease is developed. As all the other symptoms will be found accompanying other diseases, too much care cannot be exercised in deciding upon a case of this disease previous to a full development of the symptons.

All treatment thus far has proved a failure.

LOCKED-JAW.

This distressing malady, otherwise known as *tetanus*, is one generally arising from neglected wounds, such as are occasioned by a horse picking up a nail; in which case the wound, instead of being kept open by the owner, or his attendant, is suffered to close up, in consequence of which, if there is the slightest disposition to ulceration, matter is formed under the horn or hoof, which develops the most alarming symptoms, usually in about two weeks after the wound has healed. When locked-jaw is the result of wounds, it is called symptomatic, or traumatic; when existing without apparent cause, it is called idiopathic. The latter is said to be caused in some cases by the action of worms in the intestines, and it is known to have been brought

the greatest extent among those breathing impure air, and receiving improper food. Several years ago this malady was almost unknown, but has of late become extensive among animals. The disease is comparatively new, as will be seen from the fact that, until recently, writers on veterinary surgery have failed to mention it. It is impossible to say what the exciting cause is, but enough is known about the disease to show that it is due to atmospheric influences, local causes, grass containing narcotic properties, vegetable poison, etc.

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If the patient is inclined to roll, by all means let him do so—on the ground, rather than in a narrow stall.

Give the patient a wide stall and plenty of bedding. Let him lie down, rise and tumble about

the reason that every time you raise the head to give medicine the horse is sure to be thrown into spasms, that he will not recover from for hours. This is why I use the hypodermic syringe as a mode of giving horses, suffering from locked-jaw, medicine.

Administer hypodermically, night, morning and noon, one grain of strychnine dissolved in acetic acid and water. Approach the patient very carefully.

If the disease comes from a wound, treat the wound locally. While the horse is suffering from this disease keep a pail of oatmeal gruel where he can get it without any exertion. Have it made fresh every morning, noon and night: also keep a reasonable amount of clothing upon the patient.

When a horse, afflicted with locked-jaw, lies down, he will seldom rise of his own accord; therefore it is necessary to raise his head gently; hold for a few moments until he regains his equilibrium, then with the assistance of a man at the tail, help him to his feet at once. If the horse is able to masticate food, give HUMPHREY'S NERVE REMEDY sprinkled on his food, in doses as per directions.

FARCY.

This is regarded by the author as an incipient stage of glanders, or as a type of the same disease, and with proper management is curable. Experiments prove that the virus from a farcied horse will produce glanders by inoculation, in a sound one, and that the glandered matter will in like manner produce farcy. There are two distinct varieties or stages of farcy: one, which is called water farcy, is altogether superficial, being confined to the lymphatic vessels of the skin and readily yields to medical treatment; the other variety, button farcy, makes its appearance in the extremities, generally upon the inside of the hind legs, which become completely engorged; but the swelling is very different from the ligamentary thickening, being very uneven or lumpy, excessively tender, and painful to the touch. Small abscesses are formed, which at first discharge a healthy pus, but soon ulcerate, and discharge a thin, sanious matter. These abscesses, or tumors, first make their appearance on the inside of the hind legs, and then on the fore ones in like manner; the neck and lips come next in turn, and they may afterwards appear in all parts

while having colic by being over-doctored than die for want of treatment. It is a singular fact that nine men out of ten who see a sick horse know just what will cure him; but let one of their own horses get sick and they don't know anything that is good for him. Don't take any of their advice. If your horse has colic do as directed in this work, and your horse has all the medicine he needs.

Flatulent colic is an accumulation of gas in the stomach and intestines, occurring more often in the spring and fall than at any other season. Horses fed on corn are most subject to these attacks, in consequence of this kind of food fermenting readily in the stomach, more particularly when green. If the accumulation of gas thereby occasioned is not arrested, it soon swells the stomach and intestines to such an extent as to cause the diaphragm, or walls of the stomach, to give way, and death of the animal ensues. The author has known cases to terminate in death in less than half an hour from the observation of the first symptoms, so rapid is the course of this disease. The symtoms are the same as in spasmodic colic, with the exception of the swelling of the abdomen. I have had remarkable

and it is quite possible, that many parts of the body may be affected. The attack is sudden. The body, head and limbs enlarge; consciousness is partially lost. The horse stands and the breathing is quickened. Through the skin there exudes serum with blood. The nostrils and lips enlarge, and part of the swollen tongue protrudes from the mouth. The appetite is not quite lost, although deglutition (swallowing) is difficult. Thirst is great. There is generally no trouble in detecting this disease at the start. There will be a slight swelling of the limbs that will possibly disappear by exercise—but it will shortly return. The swelling is very sudden and surprising. Such a swelling means symptoms of purpura. Exudation (discharge of bloody matter) takes place. On a white limb you can see red spots from which the liquid is oozing. Small vescicles (bladders on the skin) appear on the limb and also in the mucous membrane. The mucous membrane of the nose may become a mass of corrupt matter. There will be a peculiar dropsical swelling, which may first show itself in connection with the eye. It is necessary to watch the case closely for fear of sloughing (a dropping out of the skin and flesh).

PHYSIC BOLLS, followed by HUMPHREY'S VETERINARY BLOOD REMEDY, according to directions.

CRAMP.

This complaint occasions considerabe alarm to the owner of a horse, from the peculiarity of the symptoms. A horse is found to go suddenly lame, lameness continuing, dragging one leg after him as though it were dislocated or broken. Upon taking a whip and striking him he will sometimes go two or three steps in a natural way, and then the leg drags again. Such instances have been pronounced fractures. By the young veterinarian such a mistake has been made.

For treatment, friction by hand-rubbing, with an application of HUMPHREY'S GOOD SAMARITAN and a dose of HUMPHREY'S CELEBRATED COLIC CURE is advised. Usually the animal will be found all right upon the following day.

HYDROCELE.

This disease, commonly known as dropsy of the testicles, sometimes affects the stallion. It consists of a collection of serum in the *tunica vaginalis*, or bag containing the testicles, fluctuating when pressed by the hand, but free from

tenderness or pain. Its causes are obscure, but it is supposed to result from injuries, such as strains, etc.

For treatment, the scrotum should be punctured, and the serum let out by means of a troca and canula; a weak solution of tincture of iodine injected into the *tunica vaginalis*; or equal parts of port wine and water of zinc lotion, (to one ounce of water add one grain of chloride of zinc), or lime water may be used with very good effect. The animal should be well secured before these preparations—particularly the first—are used, as the pain thereby caused may render him for the time unmanageable. Give HUMPHREY'S BLOOD REMEDY, as directed, to regulate the system.

SADDLE AND HARNESS GALLS.

These are bruises caused by friction and moisture, occurring most frequently in warm weather. The parts are rubbed raw, and sometimes bleed. The treatment is simple and effectual. Use HUMPHREY'S CARBOLIC HEALING POWDER, for healing all kinds of sores and wounds on horses and cattle. If the parts are rubbed raw uncommonly easy, give HUMPHREY'S CONDITION POWDERS.

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vantage. Bleed from the neck at least four quarts, after which place in a cool stall where he can get plenty of fresh air; place a pail of cool water before him. Give the patient, every four hours, HUMPHREY'S FEVER REMEDY, in full-sized doses. Use this treatment until the beating of the pulse diminishes, then give twice a day, HUMPHREY'S VETERINARY NERVE REMEDY in one-half pint of milk. Give frequent injections of soap-suds or warm water and salt.

The horse should be kept on a low diet for a few days, as bran mashes, carrots, or green food; but no hay should be allowed, and a pail of water should be kept before him.

When the horse is convalescing give HUMPHREY'S CONDITION POWDER as directed.

CORNS.

The first effect of contraction of the hoof is to bruise the sensitive parts within their horny limits at that part of the foot formed by the crust and bar, causing lameness, which may be acute or chronic. These bruises are commonly called corns. The reason why this portion of the foot should be so severely bruised is obvious. The crust and bar forming a triangular space be-

which he has been standing. If this course is adopted, one or two washings will generally suffice. The harness, also, should be well washed and not used for two or three months; nor should the horse be placed in his former stall for a less period, and not even then until it has been thoroughly cleaned and white-washed.

Give HUMPHREY'S BLOOD REMEDY, as per directions.

If the above treatment does not cure the animal, put in a stone jar, one pound unslacked lime, two pounds flour of sulphur, sixteen pints of water. Set on the stove, or in a regular water-bath until it boils. During the interval, stir constantly, to insure a complete mixture and keep the lime and sulphur from depositing in the bottom of the jar; for should this occur the jar will crack. The mixture must be stirred with a wooden spatula or glass rod. Keep it boiling about fifteen minutes; then set it aside for twelve hours, at the end of which pour off the clear liquor, and use while fresh. This remedy will cure the mange on horses and cattle, and is also a sure cure when used on a man having itch. It is not adapted to curing sheep, as the sulphur is said to injure the wool. The only objection

to its use is its very unpleasant odor. Before applying this mixture the animal should be thoroughly washed with warm water and common brown soap; then wipe the animal dry and apply the sulphur mixture by means of a sponge. One application, if properly applied, will usually suffice to kill the parasites. Should it fail in the first instance a re-application will do no harm.

POLL EVIL.

This disease arises from blows inflicted upon the poll or back part of the head of animals whose blood is impure, or in a morbid condition. Horses going in or out of stables with low doorways frequently strike their heads; pulling back upon the halter, and blows inflicted by passionate grooms, are among the exciting causes of this much dreaded complaint. The same injuries inflicted upon an animal in perfect health seldom cause any essential trouble; but when the blood is in a morbid condition, fistulous abscesses are formed, which are seldom curable by merely local treatment, even when the disease is treated in its earliest stages.

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In these cases the ear is found of the greatest advantage in enabling one to detect to a certainty the true condition of the parts affected. If the attack is sudden—coming on after any violent exercise—and the pulse is quick, weak and scarcely perceptible, by the application of the ear to the animal's side the case is decided, in the absence of all sounds, to be one of congestive pneumonia.

When the disease assumes an inflammatory character, the breathing becomes disturbed, the mouth hot, flanks heaving, and the nostrils expand and contract violently. HUMPHREY'S SPAVIN BLISTERS must be applied to the sides and breast.

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zinc into the opening; but in ordinary cases the bathing will be sufficient. If the animal appears to be debilitated and feverish, give internally, HUMPHREY'S VETERINARY NERVE REMEDY, as directed.

SURGICAL CASES.

NEUROTOMY, OR NERVING.

This is one of the most important operations in veterinary practice, and one that has been much abused, not only in Europe, but even more so in the United States. The operation consists in cutting out a portion of the metacarpal nerves on each side of the legs, thus destroying the sensibility of the foot. From the instantaneous relief experienced by the animal in all cases of foot lameness, no matter from what cause, an opportunity has been afforded to dishonest persons for imposing upon the public by availing themselves of this practice; an opportunity which has been freely used, and thus a valuable operation has been brought into undeserved disrepute. The cases likely to be benefited by this operation, are few, and should be selected with great care;

otherwise the loss of the animal's hoof may be, and often is, the termination of the case.

The operation is recommended by veterinary authors in incurable cases of lameness of the navicular joint; but sufficient caution is not impressed upon the mind of the reader to enable him to guard against the fatal results which too often follow.

In deciding upon a case for this operation, an animal should be selected with a foot as free from contraction as possible; free from corns; free from inflammation; with a concave ground surface; open heels; hoof free from rings or roughness; and no bony deposits within the hoof. In such a case the operation may be performed with success.

A horse that has been foundered should not, under any circumstances, be operated upon, as ossification of the laminæ frequently follows such an attack. Before performing any operation, the animal's bowels should be opened. Give one of HUMPHREY'S PHYSIC BOLLS. After the operation has been performed, care should be taken in driving the animal; for it should be remembered that no matter what accident may happen to the foot, the animal is unconscious of pain.

The feet should be frequently examined to see whether the horse has picked up a nail, or otherwise injured the foot; for such injuries would otherwise remain undiscovered until too late to save the animal's life or usefulness. The horse-shoer should be informed of the operation, in order to guard against pricking the animal's foot in shoeing.

It is necessary, previous to the operation, that the feet should be perfectly cool, which condition may be obtained by frequent bathing with cold water for several days previous. The horse is cast, the foot to be operated upon loosened, and brought forward by an assistant, resting it upon a bed of straw. An incision is made about two inches above the fetlock, between the cannon bone and back sinew, raising up with the forceps the cellular membrane, and carefully dissecting out the nerve. The precaution should be taken of placing the finger upon it, as the artery has been taken up and cut off before the mistake was discovered. Having fairly exposed the nerve, pass a curved needle armed with a strong thread under it, and by carefully drawing it up and down, the nerve may be readily separated. A knife is then passed under the nerve, and by a

quick motion the nerve is severed at the upper part. After the struggles of the animal cease, the cut nerve may be raised with the forceps, and from one-half of an inch to an inch removed. This second cut causes no pain. The wound is then closed by three single stitches. After operating upon both sides in like manner, the animal is allowed to rise. Bandages should then be placed upon the leg, and kept saturated for several days with cold water.

INFLAMED VEINS.

The jugular or neck vein sometimes becomes inflamed in consequence of being injured by a bungling bleeder. A swelling is first noticed, followed by a gaping in the incision in the neck, from which an acrid fluid oozes. The horse can live when one jugular vein is entirely destroyed. Inflammation of the vein often causes obliteration of the vein, sometimes causing some disturbance to the circulation, especially when the head is held down.

For treatment, bathe the part well with cold water, into which a small portion of tincture of myrrh is thrown, and give one of HUMPHREY'S PHYSIC BOLLS. Blister the swollen parts with

HUMPHREY'S SPAVIN BLISTER; repeat the blister if necessary, and a cure is soon effected.

It frequently becomes necessary, in order to relieve the animal from some painful disease, to resort to operations in surgery; this is a very important branch of veterinary practice. When it becomes necessary to use the knife, the animal should be spared all useless torture. In severe operations, humanity dictates the use of some anæsthetic agent to render the animal insensible to pain. Chloroform is the most powerful of this class, and may be administered with perfect safety, providing a moderate quantity of air is inhaled with or during its administration. Sulphuric ether can be successfully used and is preferable. In minor operations, the twitch, the side-hobble, or the foot-strap, is all that is necessary.

CASTING.

When a horse is to be cast for an operation, force must be used for its accomplishment. The hobbles have been preferred for that purpose by veterinary surgeons generally. They consist of four leather straps, very stout, with strong buckles, with D rings fastened about the middle

of the strap, to be buckled, one around the pastern just above the hoof of each leg, and a half-inch rope about twelve feet long, with a piece of chain about eighteen inches long fastened to one end of the rope, and a swivel with a thumb screw at the other end of the chain, and a very strong pad-lock. To throw the horse, fasten the clevis to the D ring on the front leg, on the side that you wish to come uppermost when the horse is thrown. The end of the rope is then passed from the hobble on the fore foot, through the D of the hind foot of the same side, then to the other hind foot, through D, then to the other front foot through D, and lastly through the D of the first foot. After this, much of the ease and safety of the throw depends on bringing the legs as near together as possible. This should be done by gradually moving them nearer to each other, without alarming the horse, which will very much facilitate the business, and is really of more moment than is generally supposed. A space sufficiently large should be chosen for the purpose of casting, as some horses struggle much, and throw themselves with great violence a considerable way to the one side or the other; and they are liable to do this if the feet

have not been brought near together previous to attempting to cast. The place should also be very well littered down. The legs having been brought together, the assistants must act in concert. One, particularly, should be at the head, which must be carefully held throughout, by means of a strong snaffle bridle; another should be at the hind part, to direct the fall, and force the body of the horse to the side desired. Pursuing these instructions, the animal may be at once, rather let down than thrown, by a dexterous and quick drawing of the rope—all the assistants acting in concert. When the horse is down draw chain tight through the D rings, fastening them securely by inserting padlock in one of the links. The moment the horse is down, the person at the head must throw himself upon that member and keep it secure; for all the efforts of the animal to disengage himself are begun by elevating the head and foreparts. The rope is tightened. The chain is fixed by inserting the lock through one of the links close to the D rings, to hold them together.

When the operation is over the screw, which fastens the chain to the hobble, first put upon

one fore leg, is withdrawn. The chain then flies through the D's of the other hobbles and all the legs are free.

The author is convinced by experience that this arrangement is far preferable to any hobble arrangement yet seen. It is a mistaken idea that horses must be cast for every little operation; in truth, but few operations require it.

SIMPLE OPHTHALMIA.

This disease arises sometimes from a blow inflicted by a passionate groom, or from other external injury, or from a foreign body entering the eye, causing such an irritation in that delicate organ as to sometimes terminate in blindness.

The symptoms are, considerable swelling and inflammation of the eyelids, their under surfaces being very much reddened, and the vessels highly injected with blood; there is also a cloudy appearance over the cornea, or transparent part of the eye.

For treatment, bleed from the eye vein. The bowels should be freely opened with one of HUMPHREY'S PHYSIC BOLLS. Bathe the eye freely with cold water; after which apply with syringe, twenty grains nitrate silver in two

ounces of water, once a day. Give, internally, HUMPHREY'S VETERINARY NERVE REMEDY morning and evening, and one drachm of powdered colchicum in a bran mash, at noon; no grain should be given during the treatment; corn should be especially avoided.

SPECIFIC OPHTHALMIA.

Inflammation of the eye, or specific ophthalmia, is known to horsemen as moon-blindness, from the influence which the moon is supposed to exert upon it. This, however, is one of the many popular delusions which fill the pages of many veterinary works. When a horse is once attacked with this disease, he is ever after liable to subsequent attacks, at intervals varying from one to six months, and generally terminating in blindness. This termination, may, however, be warded off for a long time by proper management; each subsequent attack rendering such a termintion more and more certain, from the increased alteration in the structures of the eye.

The horse may appear perfectly well, and the eyes clear and bright, one day, and the next morning usually one eye will be found closed, more particularly if it is exposed to a strong

light; little or no swelling will be observed; the lining membrane of the eye-lid is quite red, and the eye exceedingly watery and tender.

The causes of this disease are mainly attributable to hereditary predisposition, or to confinement in dark stables, and sudden exposure to strong light. Badly ventilated stables, in consequence of which the eyes are continually exposed to the strong fumes of ammonia arising from the urine, as also hard work in a small collar, are supposed to be exciting causes.

These cases require prompt attention, in order to ward off the serious consequenses which otherwise are in store for the unfortunate animal. The bowels should first be opened with HUMPHREY'S PHYSIC BOLLS; give bran mashes only, and when the bowels are opened, give HUMPHREY'S VETERINARY NERVE REMEDY, as per directions. In about one week, the eye will usually become clear and bright. Use as an injection for the eye, twenty grains nitrate silver in two ounces of water twice a day. If the animal is in a plethoric condition, bleeding will be found advantageous; the quantity to be regulated by the condition of the pulse.

Place the animal in a cool, well-ventilated location, free from any ammoniacal gases.

BLEEDING.

Blood-letting in former times was regarded as the sheet anchor in veterinary practice; but that day has passed. It is the author's opinion that bleeding is as much neglected to-day as it used to be abused ; although the practice of bleeding horses upon all occasions cannot be too strongly condemned. Before using the lancet the pulse must be examined, the condition of the animal considered, and the effects upon that pulse must decide the quantity of blood to be taken. The pulse will be found following the front margin of the masseter muscle, which muscle forms the fleshy parts of the head upon each side, called the cheeks. By following the front part of this muscle downward with the thumb, until near the base of the lower jaw, and then passing the forefingers under, or inside of the jaw, the pulse will be readily felt; or, to point its location out with more certainty, if an imaginary line is drawn perpendicularly from the front part of the ear downward, it will cross the point where the pulse is located and felt.

In a healthy condition the pulse beats from thirty-six to forty times a minute; variations above or below this standard indicates a morbid condition of the system. This fact should be borne in mind, in the description of any disease. When bleeding is necessary, the neck should be corded.

The mode of bleeding is with the fleam and blood-stick. By this method of bleeding, the operation can easily be accomplished by one person. After the vein has been opened, the blood will flow freely. When the desired quantity has been drawn the vein must be carefully closed by passing a pin through the centre of the opening, taking up the skin upon both sides and tieing with hair from the mane or tail.

TENOTOMY.

This operation is practised for the purpose of strengthening crooked legs or sprung knees. It consists in dividing the flexor tendons, in order to bring the limb straight. There are but few cases, however, in which the operation would be of much service, and therefore care must be exercised in selecting such cases as are proper. It would hardly be proper in a young horse, as

other means, less objectionable, often succeed. In old horses it would not be prudent, as their limbs are generally stiff and permanently set; nor would it be successful in cases where a stiff joint existed, as is often found in connection with crooked legs and sprung knees. It is always better to give a physic to a horse before performing any surgical operation. Use HUMPHREY'S PHYSIC BOLLS.

AMPUTATION OF THE PENIS.

This operation is occasionally called for in the horse, particularly in cases of paraphymosis, or protrusion of the penis, that have resisted all other modes of treatment. The operation, as performed is unneccessarily tedious, and not as successful as it should be. It is only requsite in performing this operation, to place a twitch upon the animal, and while he is standing, take the penis in the left hand, and with an amputating knife in the right hand, sever it at one stroke. The hemorrhage, although considerable, need not cause any alarm. A piece of soft cotton or sponge saturated with spirits of turpentine, or any other styptic, and placed in the sheath, will soon cause the hemorrhage to cease. Fear of

hemorrhage may deter some persons from performing what may appear a bold operation; but the author has not known a single operation performed in this way to prove fatal. After the operation, it is safest to give HUMPHREY'S NERVE REMEDY, as directed. Keep the bowels open with green or soft food.

TAPPING THE CHEST.

This operation consists in passing a round, pointed instrument, sheathed with a canula, into the chest, in order to draw off any accumulation of fluid that may have taken place in the viscus. The instrument is passed, after first making a small incision through the skin, between the eighth and ninth ribs, but not too low down. It is pushed gently forward until it penetrates the pleura, or lining membrane of the chest. The stellet is then withdrawn, and the canula is kept in place until the fluid ceases to run. If, however, a large quantity exists, all of it should not be taken away at one time; for the pressure upon the lungs having been so great, if such sudden relief is afforded, nature, unable to accommodate herself to so rapid an alteration, gives way, and the animal consequently dies. It should there-

fore be taken away at one, two, or three tappings, as occasion may require. Good, wholesome food should be allowed. Give HUMPHREY'S CONDITION POWDER to the patient as a tonic.

ŒSOPHAGOTOMY.

This operation is occasionally resorted to where any foreign substance, as an apple, potato, carrot, and the like, has lodged in the œsophagus or gullet. Where such obstructions exist, gentle manipulation with the hand should first be resorted to; if these are not successful in removing them, the probang is called for, and in case of failure thus to dislodge them, this operation is the only remaining resort.

It is not necessary to cast the animal. Cut down directly upon the swollen part of the throat and remove the obstruction. The wound may then be closed by means of the suture; that is, by single stitches, at proper distances apart, allowing the ends to hang out of the external wound, which may be closed in the same manner. The animal should be kept on gruel for several days. If the food is seen to ooze out of the wound when he is swallowing, it should be carefully washed away with cold water. The part

should be syringed with a solution: eight grains chloride of zinc in half pint of water. Give HUMPHREY'S FEVER REMEDY, as directed, until the wound commences to heal nicely, then give HUMPHREY'S CONDITION POWDERS.

BREAKING DOWN.

This accident occurs in running, jumping, racing, etc. It is sometimes called a strain of the back sinews, and lets the animal down upon the fetlock, in consequence of a rupture of the ligament of the pastern. Horses meeting with this accident are of little value ever after, as they always remain weak in the fetlock. Unless the animal is quite young and valuable, the treatment would cost more than the animal is worth.

For treatment, apply HUMPHREY'S GOOD SAMARITAN, or perhaps a little chloroform; or, if you use water, acetate of lead or opium may be added. Bandage, and bring the parts as near as possible to their natural position. Have a high-heeled shoe put on the afflicted foot. After the inflammation subsides, apply HUMPHREY'S SPAVIN BLISTER around the fetlock, and up to where the ligaments are affected. Repeat the blister if necessary. A sling is sometimes used, but if

the animal will lie down, and the limb is well taken care of, it is better than a sling. A physic boll should be administered directly after the accident has happened. HUMPHREY'S PHYSIC BOLLS are the best.

HERNIA.

By the term hernia surgeons understand a rupture or protrusion of some of the viscera out of the abdomen, forming a soft tumor. In human practice there are hernias occurring in all the viscera of the body; but in the equine race they are confined, with rare exceptions, to the abdominal viscera, the inguinal hernia being the most common. This appears in the groin, and is a protrusion of the intestine through the abdominal ring, which, in the stallion, frequently passes down into the scrotum or bag, constituting scrotal hernia. These hernias sometimes occur during castration, in consequence of the violent struggles of the animal. In such cases it is best to administer chloroform at once, in order to quiet the animal, and prevent violent struggling. The animal should be put on his back, and one hand passed up the rectum, and one or two fingers of the other hand placed upon the scrotum,

when, by careful manipulations, the intestines can generally be replaced. If, however, a reduction cannot be effected, an operation will be necessary. The hernia should be exposed by cutting through the integument a little upon one side, and coming down upon the hernia; the finger is placed upon it, and a reduction effected by careful manipulation.

The wound should then be closed by means of the suture. A folded cloth should then be applied to the part, and retained by means of a continuous bandage crossed between the legs from side to side in the form of the figure 8. Sometimes the intestine becomes strangulated, constituting strangulated hernia, the reduction of which requires an operation as before mentioned. If, however, it is found impossible then to reduce it, the finger should be passed through the opening, if possible, and a probe-pointed bistoury following upon it, enlarge the opening and replace the intestine. The same treatment as before indicated will be necessary.

The symptoms of strangulated hernia are very similar to those of acute enteritis, or inflammation of the bowels. These may be regarded as the only hernias to which the horse is liable

After the operation, keep the bowels open with soft food. Give HUMPHREY'S FEVER REMEDY and HUMPHREY'S NERVE REMEDY alternately, as directed, until all inflammation subsides.

ROWELING.

Rowels were formerly much used, but of late years the seton has superseded them. The rowel consists of a round piece of sole leather, cut out in the centre, wound round with tow, which is saturated before using with digestive ointment. The skin is cut through, and dissected upon each side sufficiently to admit the rowel. This is used principally under the jaws and in the breast. The seton answers the same purpose, and is much more convenient. It consists in arming a needle, made for the purpose, with tape, and passing it through the part desired, the seton being coated with HUMPHREY'S SPAVIN BLISTER.

FIRING.

The object in firing a horse is to produce an external inflammation where counter-action is required, as in spavin, ring-bone, curbs, etc. The operation may be performed upon the animal while standing, by placing a twitch and side line upon him; but if the surface to be fired is exten-

sive, and the animal high strung, it is better to cast him, particularly where a number of oblique, vertical or horizontal lines are to be drawn.

Firing is not practised at the present time to the extent that it formerly was, and when it is practiced every endeavor should be made to prevent, as far as possible, the blemishes which always follow the operation.

Various forms of irons have been adopted to accomplish this end. The author gives the preference to the feathered iron, which is brought down to a very fine edge.

Different opinions are entertained by veterinary surgeons as to the advantages resulting from deep firing, as compared with those accruing from surface firing. It is the author's opinion that, if firing is resorted to at all, it should be done effectually. After firing has been performed, always apply HUMPHREY'S SPAVIN BLISTER to the parts fired.

TRACHEOTOMY.

This operation is occasionally called for in cases of strangles, when the swelling threatens suffocation, as it is often the only means of saving the animal's life. It consists in making a

longitudinal incision through the skin immediately over the windpipe and below the larynx cutting through the cartilaginous rings (one or more, as occasion requires), and inserting in the opening a tube of silver made for the purpose through which the animal breathes, instead of through the nostrils. A circular piece is sometimes cut out of the windpipe in order to admit the tube more freely, which is certainly the better mode of performing the operation. In case of emergency, a piece of elder with the pith pushed, out will answer temporary purposes. It should be well secured from slipping into the windpipe by means of a piece of string.

DIARRHŒA.

This disease often arises in the absence of any inflammatory action upon the mucous surface of the intestines. Give one ounce of prepared chalk, one-half ounce tincture catechue, one ounce tincture ginger, in half pint of water, once or twice a day. Also, give HUMPHREY'S VETERINARY FEVER REMEDY and NERVE REMEDY, alternately, as directed, twice a day.

Put a handful of flour in the drinking water for the horse. Gruel, starch, or arrow-root

should be freely given; good, sweet hay is very advantageous, but no grass or bran mashes should be allowed.

The causes of diarrhœa are over-exertion, exposure to cold, drinking freely of pump or spring water, and over-doses of physic.

INORDINATE APPETITE.

Loss of appetite is soon observed and complained of by the horse-owner, and in too many instances gives occasion for improper medication. Some horses are particularly choice in the selection of their food, refusing that which is poor, or daintily and languidly picking it over. Horses sometimes eat slowly and daintily in consequence of weakness of the digestive organs; in such cases give one of HUMPHREY'S PHYSIC BOLLS, followed by HUMPHREY'S CONDITION POWDERS, mixed in the food, which will be of great benefit. Boiled potatoes and the like, will also be found beneficial in such cases.

The disease (for it is no less) of a voracious or depraved appetite, arises from a morbid condition of the digestive organs, and is generally regarded by horsemen as a very desirable feature. The owner is greatly surprised, under

such circumstances, that his animal does not thrive. A distinction must be made between a healthy and a morbid appetite. The former is indicated by the animal being ready for his food as soon as he comes in from work, and eating his allowance—if good, sweet provender—with evident relish; but the latter is indicated by a constant craving for food and water, without regard to the quality of either, the animal often times in addition to his usual allowance, eating up the litter from under him, which is frequently in a very filthy condition. He is almost constantly craving water, and will drink even from a stagnant pool. We find him tucked up in the flanks, or carrying a big belly; his dung is often soft, slimy, and fetid; he stales largely, and his urine is often very foul; he is dull, lazy, and stupid, performing his work languidly or unwillingly.

In such cases give HUMPHREY'S VETERINARY FEVER REMEDY and NERVE REMEDY, alternately, to regulate digestion.

RUPTURE OF THE STOMACH.

Rupture of the stomach or diaphragm, is caused by the stomach and bowels being distended with food far beyond their natural capac-

ity, or by an accumulation of gas in the stomach, as in flatulent colic. The diaphragm, or midriff, is often ruptured in cases of flatulence, as is the case also with the intestines. The symptoms sometimes are, that the horse will sit upon his haunches like a dog. As nothing in the way of treatment can be offered in these cases, all speculation upon them is superfluous.

CALCULUS, OR STONY CONCRETIONS.

The presence of these bodies in the stomach and intestines occasions frequent attacks of colic, and sometimes produces inflammation of the bowels. Millers' horses are supposed to be most subject to these accumulations. These abdominal calcule generally have a metallic nucleus, are composed of triple phosphates, and are generally round and smooth. When first taken from the intestines, they are of a brown, greenish color, but they soon become white. When a horse is subject to frequent attacks of colic, not occasioned by feeding upon corn, these accumulations may reasonably be suspected to be the cause.

HAIR BALL.

Hair balls are occasionly found in the stomach and intestines of a horse, generally ac-

cumulating around a metallic nucleus. There are several in the possession of the author where a piece of iron is the nucleus, and one where a piece of coal afforded the same basis. These balls occasion the same disorders, preceded by the same symptoms, and followed by the same results as the calculus. The animal may recover from a number of attacks of colic, and die at last from the same cause.

STRANGULATION OF THE INTESTINES.

On examining horses after death from an attack of colic, the small intestines are occasionally found tangled in a knot so as to cause a complete obstruction in the passages. This gives rise to colic pains, terminating in inflammation of the bowels and death. The small intestines being but loosely attached by the peritoneum, their outer covering, have free play in all directions, whence the tendency arises to these accidents; for the author believes them to spring from accidental rather than natural causes. There may be a simple twisting, or the intestines may be firmly tied into a knot.

There is another species, called intro-susception, or intra-susception, which is a slipping of

one portion of the intestines into, or inside of, another portion, thus completely blocking up the passage. There are no symptoms by which either of these conditions may be known; and such cases are therefore treated as cases of ordinary colic, or of inflammation of the bowels, as the case may be. Where, however, such a condition of the parts exists, all treatment will be useless.

WORMS.

Four kinds of worms are found in a horse, viz.: the lumbrici, which very much resembles the common earth worm in form; ascarides, so called for their resemblance to a thread; tænia, or tape worm, of which variety but little is known, as it is very rare; and lastly the persecuted bots, considered by farmers and horsemen the greatest of pests, and the most dangerous of all species.

The lumbrici are most generally found in the intestines, where they sometimes do much mischief by their irritating effects. The author once saw a very remarkable specimen of these worms. The specimen was some two yards long, consisting of a portion of the small intestine so completely filled with these worms as apparently to render it almost impossible for anything to pass

through it, the worms having accumulated in thousands. These worms are from eight to ten inches in length, round, and perfectly white. There appears to be two varieties of the lumbrici. The other variety is similar in form and length, but has numerous brown transverse lines, at about equal distances from each other, along its entire length.

The ascarides are found in the large intestines and are white worms from one to three inches in length. It is a somewhat singular fact that, although these worms are usually found in the large intestines, their origin, apparantly, is in the stomach of the horse. On opening horses after death, tumors are often found in the stomach, which, upon being cut open, will be found to contain either a thick whitish matter, or knots of small worms, from half an inch to an inch in length, of precisely the same appearance as that of the ascarides, and believed by the author to be identical with them.

The symptoms of worms are a rough, harsh, staring coat; irregular or depraved appetite; a whitish, or yellowish white, shining substance, sometimes observable about the fundament, accompanied by a disposition on the part of the

animal to rub the tail; breath occasionally hot and fetid; and in some cases a dry, short cough. The animal becomes poor in flesh and spirits.

Various modes of treatment have been adopted with but little benefit. That which has usually been found most successful in the author's practice is, to give of the following a tablespoonful every night, for five consecutive nights: one ounce tartar emetic, two ounces powdered worm seed, two ounces carbonate soda, six ounces powdered licorice root, mixed. On the fifth night give one of HUMPHREY'S PHYSIC BOLLS. As this medicine sometimes drives the worms into the back intestines, it is well to give an injection of salt and water at once, to eject them.

CASTRATION..

The period at which this operation may be best performed depends, much on the breed and form of the colt, and the purpose for which he is destined. For the common agricultural horse, the age of four or five months will be the most proper time, or, at least, before he is weaned. Few horses are lost when cut at that age; though care should be taken that the weather is not too bad, nor the flies too numerous.

If the horse is designed either for the carriage or for heavy draught, he should not be castrated until he is at least a year old; and, even then, the colt should be carefully examined. If he is thin and spare about the neck and shoulders, and low in the withers, he will materially improve by remaining uncut another six months; but if his fore-quarters are fairly developed at twelve months, the operation should not be delayed, lest he grow gross and heavy before, and perhaps has begun too decidedly to have a will of his own. No specific age, therefore, can be fixed; but the operation should be performed rather late in the spring, or early in the autumn, when the air is temperate, and particularly when the weather is dry.

No preparation is necessary for the sucking colt, but it may be prudent to physic one of more advanced age. Give one of HUMPHREY'S PHYSIC BOLLS. In the majority of cases, no after treatment will be necessary, except that the animal should be sheltered from intense heat, and more particularly from the wet. In temperate weather he will do much better running in the field than nursed in a close and hot stable. The

moderate exercise which he will necessarily take in grazing, will be preferable to entire inaction.

The old method of opening the *scrotum*, or testicle bag, on each side, and letting out the testicles, and preventing bleeding by a temporary compression of the vessel, while they are seared with a hot iron, should be abandoned. There is no necessity for that extra pain of operating with clamps compressing the spermatic chord (the blood-vessels and the nerve), between two pieces of wood as tightly as in a vice, and there left until the following day, when it may be removed with a knife.

The practice of cording or twitching colts at an early period, exposes the animal to much unnecessary pain, and is attended with no slight danger.

Another method of castration is by *torsion*. An incision is made into the *scrotum*, and the *vas deferens* is exposed and divided. The artery is then siezed by a pair of forceps contrived for the purpose, and twisted six or seven times round. It retracts without untwisting the coils, and bleeding ceases. The testicle is removed, and there is no sloughing or danger. The most painful operation is the operation of the firing-iron,

though the wound readily heals. It is to be remarked, in this connection, that the use of ether has been found very beneficial in performing the operation in the old way, both in removing all pain, and also preventing that severe struggling which often takes place, and which has sometimes been followed with very dangerous consequences. With the assistance of this agent, the operation has been safely performed in seven minutes, without any pain to the animal.

About twenty-five years ago there was a method introduced for castrating horses that has been used with much less danger and causing less pain than by any of the old methods, and that is with the ecraseur.

To castrate a horse standing, place him in one corner, or back him into the stall; put a twitch on his nose; strap up one forefoot; have a man hold the twitch; hold the knife-blade between the thumb and fingers, point upwards, having the blade one and a half inches above the end of the thumb of the right hand; step up to the horse, on his left side; take hold of the stone nearest to you, between the thumb and index finger; plunge the knife into the stone, and with the same motion cut backwards and outwards, there-

by wounding the stone, and at the same time let it out of the scrotum (bag). Proceed in the same manner with the other stone; then put the chain of the ecraseur around the chords, up as close to the belly as possible, and pinch them both off by turning the screw of the ecraseur very slowly. Some horses will stand comparatively quiet while undergoing this operation, and some will fight and plunge, making it very dangerous for themselves and the operator. Therefore, the author thinks it is far preferable and much safer, besides causing the animal less pain, by throwing him before commencing the operation. This consists of casting the animal, as recommended in this work, under the heading "Surgical Cases."

Always throw him on the left side for performing this operation. Tie one end of a rope around the pastern of the right hind leg, pass the other end of the rope between the front legs, then under the neck, then bring back around the pastern of the right hind leg again; then let this leg out of the hobbles, and draw the foot up close to the right shoulder; then let the stone out of the bag, without wounding the stone, thereby saving the horse much pain. Place the ecraseur around the chord, as close to the body as possible,

and pinch off the chord with a very slow and steady motion while turning the screw of the ecraseur. Proceed in the same manner with the other testicle.

There is no danger of hemorrhage when this operation is properly performed; only be careful about turning the screw of the ecraseur; always turn it slowly, to give the artery a chance to clot, and the hemorrhage will not amount to a tablespoonful.

The author thinks it good practice to wash the wounded parts with cold well-water, as it has a tendency to close the mouth of small blood-vessels and cleanse the parts at the same time. Then place the foot back in the hobbles before unscrewing them to let the horse up.

In twenty-four hours after castration give both wounds a good opening with the fingers and take out the clotted blood. In forty-eighty hours after castration put a piece of lard the size of a hickory nut, well up in the wound, with the fingers; as a rule this is all the treatment necessary. If there should be any after-swelling of the sheath, puncture it in about four places, near the end, with a small, sharp knife, to let bloody

serum out, which will drop for several hours, and the swelling will rapidly diminish.

DOCKING.

This is an operation, whose only sanction is to be found in the requirements of a senseless fashion. "The convenience of the rider," which is sometimes urged in its favor, is the veriest nonsense. In truth, the operation is one of the most useless the brain of man ever devised; since, instead of adding to the beauty of the animal, as some assert, it adds deformity. Not many years back, this attempted improvement upon nature became a perfect mania. In England, this cruel practice is still used. It is to be hoped, however, that this operation in the United States will speedily be frowned down. If the operation must be performed, by all means give one of HUMPHREY'S PHYSIC BOLLS, about forty-eight hours before operating, to prepare the system.

The operation as now performed by veterinary surgeons, was introduced some years ago. It consists in passing a narrow-bladed knife—a pricking knife will answer—between the coccygeal bones at the desired point, from above, downwards, cutting outwards and backwards,

on each side, so as to form two flaps, which are carefully brought together over the end of the tail, and secured by the interrupted suture; thus giving protection to the stump of the tail, and making a much neater finish than by any other method which could be adopted. No styptic whatever, is required, and there need be no fear of hemorrhage. The union generally takes place by what surgeons call first intention.

If, however, the flaps do not fit nicely, healing will not take place without suppuration. This fact should be borne in mind in performing the operation, as much time in healing may thus be saved.

By the old method, that joint is searched for which is nearest to the desired length of the tail. The hair is then turned up and tied around with tape for an inch or two above this joint, and that lying immediately upon the joint that is cut off. The horse is fettered with the side-line, and then the veterinary surgeon, with his docking machine, or the farmer with his knife and mallet, cuts through the tail at one stroke.

Some farmers dock their colts a few days after they are dropped. This is a commendable custom, on the score of humanity. No colt was

ever lost by it. The growth of the hair and the beauty of the tail not being at all impaired.

NICKING.

This barbarous operation was once sanctioned by fashion, and the breeder and dealer are even now sometimes tempted to inflict the torture of it in order to obtain a ready sale for their colts. It is not practiced to the extent that it used to be, nor is it attended by so many circumstances of cruelty.

Give one of HUMPHREY'S PHYSIC BOLLS, forty-eight hours before operating.

The operation is thus performed: The side-line is put on the horse, or, some persons deem it more prudent to cast him, and that precaution may be recommended; the hair at the end of the tail is securely tied together, for the purpose of afterwards attaching a weight to it; the operator then grasps the tail in his hand, and, lifting it up, feels for the *centre* of one of the bones—the prominence at the extremities guiding him—from two to four inches from the root of the tail, according to the size of the horse. He then, with a sharp knife, divides the muscles deeply from the edge of the tail on one side to

the centre, and, continuing the incision across the bone of the tail, he makes it as deep on the other side. One continued incision, steadily yet rapidy made, will accomplish all this. This will usually be sufficient. Two incisions are sometimes made, the second being about two inches below the first, and likewise as nearly as possible in the centre of one of the bones.

A third incision may be made; for fashion has decided that his tail shall be still more elevated and curved. Two incisions only are made in the tail of a mare, and the second not very deep.

When the second incision is made, some fibres of the muscles between the first and second will project into the wound, and must be removed by a pair of curved scissors. The same must be done with the projecting portions from between the second and third incisions. The wound should then be carefully examined, in order to ascertain that the muscles have been equally divided on each side, otherwise the tail will be carried awry. This being done, pieces of oakum must be introduced deeply into each incision, and confined, but not too tightly, by a bandage. A very profuse bleeding only will justify any tightness of bandage, and the ill conse-

quences that have resulted from nicking are mainly attributable to the unnecessary force that is used in confining these pledgets of oakum. Even if the bleeding, immediately after the operation, should have been very great, the roller must be loosened in two or three hours, otherwise swelling and inflammation, and even death, may possibly ensue. Twenty-four hours after the operation the bandage must be quite removed; and then all that is necessary, so far as the healing of the incisions is concerned, is to keep them clean.

The wounds must remain open; and this can only be accomplished by forcibly keeping the tail curved back, during two or three weeks. For this purpose, a cord one or two feet in length is affixed to the end of the hair which terminates in another divided cord, each division going over a pulley on each side of the back of the stall. A weight is hung at each extremity, sufficient to keep the incisions properly open, and regulated by the degree in which this is wished to be accomplished. The animal will thus be retained in an uneasy position, although, after the first two or three days, probably not of acute pain. It is barbarous to increase this uneasiness or pain by

affixing too great a weight to the cords; for it should be remembered that the proper elevated curve is given to the tail, not by the weights keeping it in a certain position for a considerable time, but by the depth of the first incisions, and the degree in which the wounds are kept open.

The dock should not, for the first three or four days, be brought higher than the back. Dangerous irritation and inflammation would probably otherwise be produced. It may after that be gradually raised to an elevation of forty-five degrees. The horse should be taken out of the pulleys and gently exercised once or twice every day; but the pulleys cannot be finally dispensed with until a fortnight after the wounds have healed; because the process of contraction, or the approach of the divided parts, goes on for some time after the skin is perfect over the incision, and the tail would thus sink below the desired elevation. If the tail has not been unnecessarily extended by enormous weights, no bad consequences will usually follow; but if considerable inflammation should ensue, the tail must be taken from the pulley and carefully fomented with simple warm water.

Locked-jaw has in some rare instances followed, under which the horse generally perishes. The best means of cure, in the early state of this disease, is to amputate the tail at the joint above the highest incision. In order to prevent the hair from coming off, it should be unplaited and combed out every fourth or fifth day.

THE TEETH.

THE FIRST APPEARANCE AND SUCCESSIVE CHANGES OF THE TEETH, WITH MARKS AND THEIR DESCRIPTIONS FROM COMMENCEMENT TO MATURITY.

Seven or eight months before the foal is born, the germs, or beginnings of the teeth, are visible in the cavities of the jaws. At the time of birth, the first and second grinders have appeared large, compared with the size of the jaws; seemingly filling them. In the course of seven or eight days the two centre nippers are seen.

In the course of the first month the third grinder appears above and below; and not long after, generally before six weeks have expired, another incisor, (tooth) above and below, will be

seen on each side of the two first, which have now considerably grown, but not attained their perfect height.

At two months the centre nippers will have reached their natural level, and between the second and third month the second pair will have overtaken them. They will then begin to wear a little, and the outer edge, which was at first somewhat raised and sharp, is brought to a level with the inner edge, and so the mouth continues, until some time between the sixth and ninth month, when another nipper begins to appear on each side of the first two, making six above and below, and completing the colt's mouth; after which the only observable difference, until between the second and third year, is in the wear and tear of these teeth.

These teeth are covered with a polished and exceedingly hard enamel; indeed, it is so hard that it almost bids defiance to the action of a file. It spreads over that portion of the tooth which appears above the gum, and not only so, but as they are to be so much employed in nipping up the grass and gathering the animal's food—and in such employment even this hard substance must be gradually worn away—a por-

tion of it, as it passes over the upper surface of the teeth, is bent inward, and sunk into the body of the teeth, and forms a little pit in them. The inside and bottom of this pit being blackened by the food, constitute the *mark* in them, by the gradual disappearance of which, in consequence of the wearing down of the teeth, we are enabled for several years to judge of the age of the animal.

The colt's nipping teeth are rounded in front, somewhat hollow toward the mouth, and presenting a cutting surface, with the outer edge rising in a slanting direction above the inner edge. This, however, soon begins to wear down, until both surfaces are level, and the mark, which was originally long and narrow, becomes shorter, wider, and fainter. At six months the four nippers are beginning to wear to a level.

The four middle teeth are almost level, and the corners are becoming so. The mark in the two middle teeth is wide and faint; in the next two teeth it is longer, darker, and narrower. In the corner teeth it is longest, darkest, and still narrower.

The back teeth, or grinders, will not guide us far in ascertaining the age of the animal, for we

cannot easily inspect them; but there are some interesting particulars connected with them. The foal is born with two grinders in each jaw, above and below, or they appear within two or three days after birth. Before the expiration of the month they are succeeded by a third, more backward. The crowns of the grinders are entirely covered with enamel on the tops and sides, but attrition soon wears it away from the top, and there remains a compound surface of alternate layers of crusta petrosa, (enamel and ivory), which are employed in grinding down the hardest portions of the food. Nature has therefore made an additional provision for their strength and endurance.

At the completion of the first year a fourth grinder usually comes up, and the yearling has then, or soon afterwards, six nippers and four grinders above and below on each jaw, which, with the alteration in the nippers just described, will enable us to calculate the age of the colt, subject to some variations arising from the period of weaning and the nature of the food.

At the age of one year and a half the mark in the central nippers will be much shorter and fainter; that in the two other pairs will have un-

dergone an evident change, and all the nippers will be flat. At two years this will be more manifest.

About this period a fifth grinder will appear, and now, likewise, commences another process. The first teeth are adapted to the size and wants of the young animals. They are sufficiently large to fill the colt's jaws; but when these bones have expanded with the increasing growth of the animal, the teeth are separated too far from each other to be useful, and another and larger set is required. The second teeth then begin to push up from below, and the fangs of the first are absorbed, until the former approach the surface of the gum, when they drop out. Where the temporary teeth do not rise immediately under the milk teeth, but by their sides, the latter, being pressed sideways, are absorbed throughout their whole length. They grow narrow, are pushed out of place, and cause inconvenience to the gum, and sometimes to the cheek, and should be extracted.

The teeth which first appeared are first renewed, and therefore the front or first grinders are changed at the age of two years. During the period between the falling out of the central milk

teeth and the coming up of the permanent ones, the colt, having a broken mouth, may find some difficulty in grazing. If he should fall away considerably in condition, he should be fed with mashes or cut feed.

The central teeth are larger than the others, with two grooves in the entire convex surface, and the mark is long, narrow, deep and black. Not having yet attained their full growth, they are lower than the others. The mark in the next two nippers is nearly worn out, and it is wearing away in the corner nippers.

Is it possible to give this mouth to an early two-year-old?

The ages of all horses used to be reckoned from the first of May; but some are foaled even as early as January, and being actually four months over the two years, if they have been well nursed and fed, and are strong and large, they may, with the inexperienced, have an additional year put upon them. The central nippers are punched or drawn out, and the others appear three or four months earlier than they otherwise would. In the natural process they would only rise by long pressing upon the first teeth, and causing their absorption. But, oppo-

sition from the first set being removed, it is easy to imagine that their progress will be more rapid. Three or four months will be gained in the appearance of these teeth, and these three or four months will enable the breeder to term him a late colt of the preceding year. To him, however, who is accustomed to horses, the general form of the animal, the little development of the fore-hand, the continuance of the mark upon the next pair of nippers, its more evident existence in the corner ones, some enlargement or irregularity about the gums from the violence used in forcing out the teeth, the small growth of the first and fifth grinders, and the non-appearance of the sixth grinder, which, if it be not through the gum at three years old, is swelling under it, and preparing to get through—any, or all of these circumstances, carefully attended to, will be a sufficient security against deception.

A horse at three years old ought to have the central permanent nippers growing, the other two pairs wasting, six grinders in each jaw, above and below, the first and fifth level, the others and the sixth protruding. The sharp edge of new incisors will be very evident when compared with the old teeth.

As the permanent nippers wear and continue to grow, a narrow portion of the cone-shaped tooth is exposed by the attrition, and they look as if they had been compressed; but it is not so. Not only will the mark be wearing out, but the crowns of the teeth will be sensibly smaller.

At three years and a half, or between that and four, the next pair of nippers will be changed, and the mouth at that time cannot be mistaken, the central nippers will have attained nearly their full growth. A vacuity will be left where the second stood, or they will begin to peep above the gum, and the corner ones will be diminished in breadth, worn down, and the mark becoming small and faint. At this period, likewise, the second pair of grinders will be shed.

At four years the central nipper will be fully developed; the sharp edge somewhat worn off, and the mark shorter, wider and fainter.

The next pair will be up; but they will be small, with the mark deep and extending quite across them. The corner nippers will be larger than the inside ones, yet smaller than they were, and flat, and the mark nearly effaced. The sixth grinders will have risen to a level with the others, and the tusks will begin to appear.

The tusks are four in number—two in each jaw—situated between the nippers and the grinders, much nearer to the former than the latter, and nearer in the lower than in the upper; but these distances increase in both jaws with the age.

In shape the tusk somewhat resembles a cone; protrudes from the gum about half an inch, and is sharp, pointed and curved. The appearance of this tusk in a horse may vary from four years to four years and six months. It can only be accelerated a few weeks by cutting the gum over it.

At four years and a half, or between that and five, the last important change takes place in the mouth of the horse; The corner nippers are shed, and the permanent ones begin to appear. The central nippers are considerably worn, and the next pair are commencing to show marks of usage. The tusk has now protruded and is generally a full inch in height. Externally it has a rounded prominence, with a groove on either side, and it is evidently hollowed within.

The reader scarcely needs to be told that after the rising of the corner nipper the animal changes

its name—the colt becomes a horse, the filly, a mare.

At five years the horse's mouth is almost perfect. The corner nippers are quite up, with the long, deep mark, irregular in the inside, and the other nippers bearing evident tokens of increased wearing. The tusk is much grown, the grooves have almost or quite disappeared, and the outer surface is regularly convex. It is still as concave within, and with the edge nearly as sharp as it was six months before. The sixth molar is quite up, and the third molar is wanting. This last circumstance, if the general appearance of the animal, and particularly his forehand, and the wearing of the central nippers, and the growth and shape of the tusks be likewise carefully attended to, will prevent deception if a late four-year-old is attempted to be substituted for a five-year-old. The nippers may be brought up a few months before their time, and the tusks a few weeks; but the grinder is with difficulty displaced. The last three grinders and the tusks are never shed.

A mare seldom has tusks.

At six years the *mark* on the central nippers is worn out. There will still be a difference of color in the centre of the tooth. The cement

filling up the hole, made by the dipping of the enamel, will present a browner hue than the other parts of the tooth; and it will be evidently surrounded by an edge of enamel, and there will always remain a little depression in the centre, and also a depression around the case of enamel; but the deep hole in the centre of the teeth, with the blackened surface which it presents, and the elevated edge of enamel, will have disappeared. Persons not much accustomed to horses have been puzzled here. They expected to find a plain surface of uniform color, and knew not what conclusion to draw when there were both discoloration and irregularity.

In the next incisors, the mark is shorter, broader, and fainter, and in the corner teeth the edges of the enamel are more regular and the surface is evidently worn. The tusk has attained its full growth, being nearly or quite an inch long, convex outward, concave within, tending to a point, and the extremity somewhat curved. The third grinder is fairly up, and all the grinders are level.

The horse may now be said to have a perfect mouth. All the teeth are produced, fully grown, and have sustained no material injury. During

these important changes of the teeth the animal has suffered less than could be supposed possible.

At seven years, the mark, in the way in which it has been described, is worn out in the four central nippers, and is fast wearing away in the corner teeth; the tusk is also beginning to be altered. It is rounded at the point, rounded at the edges, still round without, and beginning to get round inside.

At eight years old the tusk is rounder in every way; the mark is gone from all the bottom nippers, and it may almost be said to be out of the mouth. There is nothing remaining in the bottom nippers that can clearly show the age of the horse or justify the most experienced examiner in giving a positive opinion. This should be distinctly borne in mind. It is easy, from many general signs, to see that a horse is above eight years old; but it is impossible to judge, certainly, how much older. The length and angularity of the nippers, the depth of the super-orbital cavities, and other points of information, may enable a good judge to guess, comparatively, but never to speak surely. Dealers have resorted to a method of prolonging the mark on the lower nippers. It

is called "bishoping." The operation is performed with a pegging awl. A hole is dug in the now almost plain surface of the teeth, in shape resembling the mark yet left in those of a seven-year-old horse. The hole is then blackened with the point of a black lead pencil, moistened, and dipped in powdered nitrate of silver. Inexperienced men would be very easily deceived by this trick. Horsemen, after the animal is eight years old, are accustomed to look at the nippers in the upper jaw, and some conclusion can be drawn from the appearance which they present. It cannot be doubted that the mark remains in them for some years after it has been obliterated in the nippers of the lower jaw. There are various opinions as to the intervals between the disappearance of the mark from the different cutting teeth of the upper jaw. Some have averaged it at two years, and others at one. The latter opinion is more commonly adopted by those most conversant, and then the age is thus determined.

At nine years the mark will be worn from the middle nippers; from the next pair, at ten; and from the upper nippers, at eleven. During these periods the tusk is likewise undergoing a

manifest change. It is blunter, rounder, and shorter. In what degree this takes place in the different periods, long and favorable opportunities can alone enable the horseman to decide. The alteration in form of the tusks is frequently uncertain. It will sometimes be blunt at eight; and at others remain pointed at eighteen.

After eleven, and until the horse is very old, the age may be guessed at with some degree of confidence, from the shape of the upper surface or extremity of the nippers. At eight they are all oval, the length of the oval running across from tooth to tooth; but as the horse gets older, the teeth diminish in size—and this commencing in their width, and not in their thickness. They become a little apart from each other, and their surfaces become round instead of oval. At nine, the centre nippers are evidently so; at ten, the others begin to have their ovals shortened. At eleven, the second pair of nippers is quite rounded; and at thirteen, the corner ones have also that appearance. At fourteen, the faces of the central nippers become somewhat triangular. At seventeen, they are all so. At nineteen, the angles begin to wear off, and the central teeth are again oval, but in a reversed direction, viz., from

outward, inward; and at twenty-one, they all wear this form.

It would of course be folly to expect anything like a certainty in an opinion of the exact age of an old horse as drawn from the above indications. It is contended by some, though denied by others, that stabled horses have the marks sooner worn out than those that are at grass; and crib-biters still sooner. At nine or ten, the bars of the mouth become less prominent and their regular diminution will designate increasing age. At eleven or twelve, the lower nippers change their original upright direction and project forward horizontally, becoming of a yellow color.

The general indications of old age, independent of the teeth, are the deepening of the hollows over the eyes; gray hairs, and particularly over the eyes and about the muzzle; thinness and hanging down of the lips; sharpness of the withers, sinking of the back, lengthening of the quarters and the disappearance of windgalls, spavins and tumors of every kind.

Horses kindly and not prematurely used, sometimes live to between thirty-five and forty-five years of age.

EXTRACTING TEETH.

When a carious tooth, or one so unequally worn as to cause mischief is discovered, its removal is necessary to the restoration of the animal's health. In order to accomplish this the horse must be cast, and the age of the animal considered, in order to make choice of proper instruments. If he is young—say from four to six years—an instrument made similar to the key used by surgeon dentists, is the best adapted; if he is old, a pair of forceps of large size, made in the same manner as the tooth-forceps of dentists, will answer, as the roots of the teeth in old horses are comparatively short, and therefore may be easily extracted.

The molar teeth of horses often want filing on the sides—enough to take off the sharp edges. In doing this we stop the teeth from cutting the cheeks and tongue.

DENTITION OF ANIMALS.

Man	has	32	Teeth.
Horse	"	40	"
Mare	"	36	"
Ox	"	32	"
Dog	"	42	"
Pig	"	44	"
Sheep	"	32	"

SLOBBERING.

This trouble is often caused by giving the horse too much clover hay; sometimes we are unable to trace it to any cause. By some horsemen it is attributed to a flabby condition of the inside of the mouth near the first molar teeth, on the lower jaw, and called the bags. These are sometimes cut by placing the thumb on the inside of the lip, and with the fingers of the same hand turn the bag out, and with a sharp knife make a deep incision to the bottom of the bag. Give HUMPHREY'S VETERINARY BLOOD REMEDY, once a day, until the wound is healed; the result will be beneficial.

DISEASES OF THE LIVER.

Diseases of the liver are of very common occurrence in the horse, although the singularity of the internal structure of that animal renders it less liable to jaundice than that of the human being. The horse possesses no gall-bladder; instead of such a reservoir it has simply a gall-duct, called the hepatic duct, which enters that portion of the intestines called the duodenum, about six inches from the stomach, so that the

gall is emptied into the bowels as fast as it is secreted.

HEPATIRRHŒA.

This is a rupture of the peritoneal coat of the liver, and hemorrhage from it. It occurs most generally in aged horses and is always preceded by structural derangement, or disorganization, which, from the obscurity of the symptoms, escapes notice until it is too late for medical aid. The animal generally does his work as usual until within a few hours of his death, keeping in full condition, and presenting to the eye of his owner no appearance of disease. The symptoms are so gradual in their development as to escape observation until the peritoneum, or covering of the liver, gives way or becomes ruptured, from the great distension of the liver, when the blood flows freely into the abdominal cavity, giving rise to the most alarming symptoms, and the horse often dies within an hour after he is first discovered to be ill.

The symptoms which are noticeable are suddenly developed, and generally appear immediately after eating or drinking. The animal will sometimes fall suddenly and die in a few min-

utes, without having shown any previous indisposition; at other times the respiration becomes hurried, the belly begins to swell, the pulse becomes gradually diminished and very feeble, partial or general sweating takes place, the animal walks with a tottering gait, the membrane lining the eyelids, lips and nose becomes blanched, indicating internal hemorrhage, there is a vacant stare in the eye, with great prostration of strength, which soon terminates in death. Upon opening the abdomen it is found filled with dark venous blood, in a fluid state, and the liver is several times its natural size, and exceedingly tender. Where it is possible to detect the existence of the disease in its incipient stages, calomel would be the appropriate remedy, as it is as justly entitled to rank as a specific for the diseases of the liver of the horse, as it is for his master.

DECAYED STRUCTURE OF THE LIVER.

This also is a disease of common occurrence, though, like the other diseases of this organ, the symptoms, from their obscurity, are not well understood by the veterinary practitioner, but little attention having as yet been paid to its investigation.

The first symptoms noticed are loss of appetite; surfeit; and being hide-bound; rough, staring coat; food passing undigested; stools of a clay color; prostration of strength; readiness of sweat; pulse quick, but feeble; respiration hurried.

TREATMENT.

Give one of HUMPHREY'S PHYSIC BOLLS, followed by HUMPHREY'S CONDITION POWDERS, as per directions.

INFLAMMATION OF THE LIVER.

Hepatitis, or inflammation of the liver, does not generally exist as a primary affection, though it is frequently found as a sympathetic one, being not uncommonly connected with epidemic, or epizootic diseases, particularly in that which is known to horsemen as pink-eye distemper.

The most common cause of this disease is a fullness of blood, or a plethoric condition of the system, in consequence of which too much blood is sent to the liver; want of exercise, and too high feeding, particularly with corn, are also causes of inflammation of this important organ.

The symptoms of this disease are more obscure than those of any other part, and the diffi-

culty is materially enhanced by the inability of the animal to assist us with his tongue. Still, by close observation we can trace the symtoms with such a degree of accuracy as to render our treatment almost a certainty. The mouth and breath are hot; the extremities cold; the membrane lining the eyelids highly injected, presenting an orange-red appearance; the pulse rises from seventy to one hundred or more a minute, and is soft and full; the appetite lost; the animal looks wistfully and deploringly at his sides; lies down, but gets up again directly; the respiration at times is perfectly tranquil, at other times slightly disturbed and at others again very much disturbed and distressing to the animal—so that in fact, the amateur cannot be governed by this symptom—there is usually much tenderness of the right side; and the dung small, hard and generally dark colored.

In the acute stage the animal is generally in a state of plethora, in consequence of which a small quantity of blood may be taken to good advantage; but in the absence of plethora he must not bleed. HUMPHREY'S SPAVIN BLISTER may be applied to the sides and will be found serviceable. Injections of castile soap and water

should be used occasionally until the bowels are opened. Give one of HUMPHREY'S PHYSIC BOLLS in the first stages. Keep the body warm and bandage the legs with flannel; turn into a loose box-stall, where the atmosphere is pure. When convalescent, give one of the following bolls, night and morning: Of sulphate of iron, two ounces; pulverized gentian root, one and a half ounces; pulverized Jamaica ginger, one ounce; and pulverized anise seed, one ounce; mix with molasses and divide into sixteen parts, or give HUMPHREY'S BLOOD REMEDY as per directions, which is decidedly preferable.

JAUNDICE.

This disease depends upon an obstruction of the biliary excretions, causing a yellow discoloration of the mucous membrane, fat, ligaments, and other tissues of the body; it will oftener be found in connection with other diseases than distinct and independent of them, although it does occasionally exist in a pure, or unmixed form, the symptoms of which are not at first observed by the horseman, on account of their obscurity. The lining membranes of the eyelids and lips are of a yellow or orange color, extending even to

the white of the eye. The dung pale, small, and dry; bowels generally constipated; appetite lost or languid; the animal hangs his head, is dull and mopy, and becomes very poor in flesh.

In the treatment of this disease the principal reliance is upon calomel; two drachms of which, made into a bolus with flaxseed meal and molasses should be given, followed in twenty-four hours by one of HUMPHREY'S PHYSIC BOLLS. The animal should have moderate daily exercise; his body should be kept warm; and if there be pain in the right side, apply HUMPHREY'S SPAVIN BLISTER. If necessary the calomel may be repeated in scruple doses, once a week, followed by HUMPHREY'S CONDITION POWDER as a tonic.

AZOTURIA.

Azoturia is a disease that attacks a horse that has been working, and then left idle in the stable and fed with nutritious food, producing a large amount of albumen, particularly in the blood, then taken out and exercised, causing an excess of urea and hippuric acid; causing partial or complete loss of power of the hind limbs, due to spasms of the muscles of the loin and tissue, in connection affecting the kidneys more or less.

When it attacks the gluteal muscles it is not so severe as it is when it attacks the psoas muscles. In some cases the covering of the spinal cord may be affected, also the sheath of the nerves. Sometimes the secretion of the kidneys are arrested. The faster the horse is driven the more serious the attack will be. It is most common in the winter months. The symptoms begin to exhibit by an unusual degree of restlessness, perspiring profusely, with a disposition to lie down; a stiff gait; weakness in the hind-quarters; frequent pulse; redness of the mucous membrane; anxious expression of countenance, a remarkable swelling of great firmness over the loins and hips. When there is any discharge of urine it is of a dark red or brown color; the animal is more or less bloated; great difficulty of breathing, and if the animal is not relieved death ensues.

Azoturia is often taken for inflammation of the kidneys. If the animal is properly treated in time, the symptoms will disappear, perhaps, in from four to ten hours, and in two or three days the animal will be well.

TREATMENT.

In the first stages give one of HUMPHREY'S

PHYSIC BOLLS. Apply blankets immersed in hot water over the loins and cover with a dry blanket, or you may apply HUMPHREY'S GOOD SAMARITAN linament, rubbed in as a shampoo over the loins; or mustard may be used. If the patient cannot urinate, the water must be drawn with a catheter, (an instrument for emptying the bladder). Give one ounce sweet spirits of nitre every two hours. If after a few hours the pulse beats rapidly, give twenty drops of tincture of aconite root, every three hours, or give HUMPHREY'S FEVER REMEDY, which is safe and reliable. Give the patient water in small amounts at frequent intervals, (for he will be thirsty), turning him from side to side often. If there is any improvement try to get him up on his feet. He will probably stand but a short time and then lie down again. Do not allow him to lie too long. Use the sling if possible. If the patient seems to be suffering with great pain, give one ounce laudanum and one ounce sulphuric ether or HUMPHREY'S CELEBRATED COLIC CURE, in half-sized doses, in one-half pint of water once in three hours, until he is easier. In the early stages it might be beneficial to bleed. Keep the patient

on his feet as much as possible. When convalescent give HUMPHREY'S CONDITION POWDER.

CAPPED ELBOW, OR SHOE BOIL.

This is commonly a serous abscess, with considerable thickening of the surrounding tissue at the point of the elbow and is generally caused by laying on the heel of the shoe, which bruises the part.

TREATMENT.

Throw the horse and with the knife dissect the entire tumor; close the wound with stitches and bathe with HUMPHREY'S GOOD SAMARITAN. After-treatment is the same as that of any wound. If this operation is properly performed there is no danger of the tumor ever returning.

When a shoe boil is first noticeable, apply HUMPHREY'S SPAVIN BLISTER, and nail a joist, two by four, flatwise across the stall, about six inches back of the horse's front feet. Pad the foot every night, thereby changing the manner of his lying down, and the shoe boil will, in all probability, disappear.

CLEANSING THE SHEATH.

This very important part of the care of horses is often neglected. Geldings often become dirty

or foul in the sheath and should be cleansed frequently, as there is nothing more filthy in a horse than a sheath that becomes covered with a scaly, sebaceous substance inside. When the sheath is in this state there will always be a lump at the head of the penis, in the mouth of the urethra, called a bean by horsemen. This should be removed.

All that is required for cleansing a horse's sheath is a pail of warm water, a sponge or rag, a piece of castile soap and a piece of lard about the size of a walnut. Care should be taken by the person cleansing the sheath to have his nails trimmed short, to avoid the possibility of scratching.

In washing the sheath be careful not to pull off the scales; soak them off with warm water and soap. After the parts are cleansed and dried, apply the lard.

If the urine should be thick and cloudy, give every morning a dose of HUMPHREY'S VETERINARY FEVER REMEDY, then take a piece of rosin as large as a hickory nut, crush to a powder, and a tablespoonful of castile soap shavings; mix them with the horse's food for five consecutive nights, by which time the urine will be clear.

STOPPAGE OF THE WATER.

The symptoms are violent pawing; shifting position and constantly manifesting a disposition to lie down; anxiously looking at the sides; frequent efforts to make water, and a cold sweat breaks out all over the body.

TREATMENT.

Relieve the patient of pain by giving HUMPHREY'S COLIC CURE, as directed, alternately with FEVER SPECIFIC, NO. 1. Apply warm salt and water to the loins, and mustard to the abdomen.

PROFUSE STALLING.

This disorder, called also diabetes, is of frequent occurrence in the horse, and is attended with debility, impaired appetite and sometimes loss of flesh. The causes are, powerful diuretics, unwholsome food and foul air. The treatment is simple and effective; a great variety of medicinal substances being used in its abatement. Give one of the following bolls every day, for five days: one drachm iodine, five drachms powdered liquorice root, followed by HUMPHREY'S CONDITION POWDERS, according to directions. HUMPHREY'S NERVE REMEDY can

also be given with decided advantage for this disease.

STONES IN THE BLADDER.

These differ from stones in the kidneys in form and external appearance; presenting, in consequence of the constant washings of the calculus by the urine, an uneven, or what is called a mulberry appearance; externally, it is of a reddish-brown color. When these stones are quite large very great inconvenience is occasioned to the animal.

Stones in the bladder may exist a long time before any perceptible symptoms of their existence are manifested. The urine is generally thick and of a whitish color, with frequent desire to void the urine, accompanied with difficulty and pain; the urine occasionally presents a bloody appearance; in some cases all the symptoms of colic are present, rendering it difficult to distinguish between the two disorders. If the pain is severe, the animal paws violently, kicks at his sheath, lies down, rolls, and gets up again quickly, sweats in various parts of the body, giving off the odor of urine, give HUMPHREY'S CELEBRATED COLIC CURE to relieve the pain,

then if relief is not obtained, apply to some good veterinary surgeon.

BOTS.

These are the larvæ of the gad-fly. During the summer months, when the horse is at grass, the parent fly is seen busily engaged in depositing its eggs upon the hairs of the animal, in such places as are easily reached by his mouth. This seems to be an instinctive feature in this insect. The legs, shoulders and body are the parts selected for this purpose. The gad-fly is seen hovering in an upright position when about to deposit her egg; she then darts upon the horse, fixing the egg to the hairs by means of a glutinous substance; she again prepares another, which is deposited in like manner, until many hundreds are observed covering the hairs of the animal. The rapidity with which these eggs are prepared and deposited is astonishing. They are taken into the mouth by the animal biting or licking himself or his mate, and are hatched upon the tongue, or taken into the stomach and there hatched. If the eggs are recently produced, they pass into the stomach before they are hatched; but if they remain for a considerable time upon

the hairs they are hatched by the warmth of the tongue and they pass into the stomach, where they are developed. This fact may be easily and satisfactorily proven, by taking the newly deposited egg in the hand, and then applying a warm fluid, when it will be observed that the egg is softened or dissolved, but does not produce the Bot; whereas, if the egg be old, it will hatch in the hand.

There are no symptoms by which the existence of bots is indicated, except it be in the spring, when they pass from the horse by the fundament, assuming again the form of a chrysalis to reproduce the parent fly. The symptoms of other diseases, as inflammation of the bowels, etc., are often assigned as indicating the presence of bots; but, although bots may sometimes give rise to these conditions, it is worse than folly to jump at the probable cause in such cases and say that it is a case of bots because a horse looks at his sides, and the like. When such an instance is encountered, no matter whether it arise from bots or not, the animal must be treated for the inflammation which is present. If we succeed in controlling it, and restoring the stomach to healthy action, the bots

are no longer troublesome; but if, on the contrary, we commence drenching the animal for bots, the chances are that we shall kill him. Morbid conditions of the stomach will sometimes so incommode these little creatures as to cause them to escape from their unpleasant situation, which is commonly effected by perforating the walls of the stomach and allowing the fluids to escape into the abdomen, in which case no medical agent will save the animal's life. Fortunately, however, these cases but rarely occur.

You may put them into new rum and keep them for weeks, and on taking them out and exposing them to the sun's rays they will manifest vitality. We all know that the moment the breath leaves the horse's body it is subject to the common law of decomposition; but the central organs, where the greatest activity prevailed during life, are generally the first to succumb.

The stomach being partly decomposed offers but little opposition to their encroachments. They burst their prison-house and hence are found in the abdominal cavity, and when there, they may be said to have jumped from the "frying pan into the fire."

Open a horse immediately after death, and

provided his stomach be in a healthy state, you will find that bots have not penetrated beyond the cuticular coat of it; but if he shall not be examined until some hours have elapsed, the bots may be found to have passed through the walls of the decomposed stomach and its peritoneal tunic.

We contend that the stomach of a horse is the natural habitation of the bot during its minority, and at the proper season, the digestive canal is the usual channel for its introduction into the external world. They are in the same condition as a new-born babe, or an idiot.

We very much doubt if the bot can at any time, by voluntary act, vacate the body of the horse. Veterinary surgeons have long since discarded the absurd notion, that bots are the cause of any suffering to the horse. In fact, some of the most eminent of them assert that these little creatures, with their rough exterior, are rather beneficial than otherwise and that by friction and irritation they arouse the sluggishness of the stomach and thus promote digestion.

It will be borne in mind that in large cities, where horses are not indulged in a run at grass,

it is no unusual occurrence to find their stomachs free from bots.

INFLAMMATION OF THE MEMBRANE NICTITANS.

This affection is commonly called haw or hooks. The membrane affected is somewhat triangular in form, concave on the inner side and convex externally. It is mainly composed of cartilage or gristle and is situated between the eye-ball and the side orbit, at the inner corner of the eye. In a perfectly healthy state but a very small portion of this membrane is visible; but when inflamed it bulges out very considerably. A portion of the membrane covering it becoming, as it were, folded upon itself, presents a hook-like appearance, which has been regarded by some persons as a foreign substance, to which the name of "hooks" has been given, and its removal with the knife recommended by them. It so happens, however, that this membrane is placed in the eye or attached thereto to serve a useful purpose—that of cleansing the eye from dirt or any foreign substance that may chance to get in it, which is accomplished by throwing it

over the ball of the eye and removing any obstruction.

Injury must result from cutting away any portion of this membrane, as its function is in part destroyed, since the animal can no longer throw it over the ball of the eye with the same facility as before the operation was performed.

TREATMENT.

Give one of HUMPHREY'S PHYSIC BOLLS; bleed from the eye-vein beneath the eye; place some food on the ground to induce the patient to lower his head and the blood will flow freely; wet a cloth with cold water and fasten it to the halter so that it will cover the eye; give HUMPHREY'S FEVER REMEDY as directed and the malady will soon disappear.

AMAUROSIS.

In this disease, called also Gutta Serena, we find the eyes bright and clear, with a peculiar glassy appearance about them not observed in an eye where vision is perfect; although no alteration in the structure of the eye has taken place, yet the horse is partially or totally blind. A mere examination of such eyes would not enable us to pronounce upon the blindness of the ani-

mal; but if he be taken from a dark stable to a strong light, it will readily be detected, as the light causes no change to take place in the pupil.

This disease is regarded as paralysis of the optic nerve; in some cases yielding readily to medical treatment and in others proving incurable. Horses are often sold with this disease upon them, as perfectly sound, and the first intimation the purchaser receives of his horse being blind is his running against a wall-fence, post, or any thing that may chance to be in his way. It sometimes makes its appearance very suddenly; occasionally it exists in a temporary form as a sympathetic affection, as in apoplexy; it also at times occurs during the period of gestation, etc.

Constitutional treatment only is likely to succeed in these cases. HUMPHREY'S PHYSIC BOLL should be given to open the bowels. After the boll has operated (which should be in twenty-four hours), give, morning and evening, half a drachm of nux vomica, mixed in the feed; bleed from the eye-vein. Give HUMPHREY'S CONDITION POWDERS, as directed. They are as good a tonic as can be given.

DISTEMPER.

All catarrhal affections are classed by horse-owners under the common head of distemper. Common catarrh, epizootic or epidemic catarrh, laryngitis, bronchitis and all other diseases accompanied by nasal discharges, are regarded by horsemen generally as one and the same disease.

FALLING OF THE SOLE.

This is called by horsemen pumiced foot. It is preceded by founder and is in reality one of the terminations of that disease, arising from slow, continued inflammation of chronic founder, which causes absorption of the outer edge of the coffin-bone, the latter thereby gradually loosing its concave surface and becoming convex. The sole, yielding to this gradual change, becomes flat, or, in some instances convex. Very little can be done in such cases by way of treatment, yet by careful shoeing the animal may be rendered useful, although never sound.

NAVICULARTHRITIS.

Coffin-joint lameness, as it is generally termed, is a disease of very common occurrence and often troublesome to manage. This joint is formed by

the union of three bones: the *os pedis*, or coffin-bone, situated immediately within the hoof; the *coronary*, or small pastern bone, the lower half of which is situated within the upper part of the hoof, called the coronet, and uniting with the *os pedis;* and the *navicular*, situated between and behind the two, uniting with both and forming the navicular joint. This joint is protected against injury from concussion by the fatty frog, the sensible frog and the horny frog situated beneath it, and forming a soft elastic cushion on which it may rest. So long as the foot remains in a healthy condition, there is little danger of the occurrence of this disease. Even though the foot be strained very considerably and a high degree of inflammatory action be produced, this disease will hardly arise, unless the inflammation becomes chronic.

Navicular-joint lameness is sometimes found existing in feet that have open heels and elastic frogs. If from any cause these frogs lose their moisture, they also lose their elasticity and the foot, therefore, strikes the ground with a jar. Inflammation of a chronic character sets in, the *synovia* (joint oil) becomes absorbed, and caries of the bones is established, which destroys

their articular surfaces and causes excessive lameness. Occasionally, owing to some new injury, acute inflammation sets in, causing new depositions of bone to be thrown out, and uniting the three bones together; which union is called *anchylosis*. This condition may be known by stiffness, and the animal walking upon the toe.

The symptoms of this disease have been confounded with those of other diseases of the foot. The horse is found to go lame upon coming out of the stable, which wears off after traveling some distance; one foot is observed in advance of the other when the animal is at rest; as the disease advances the lameness becomes more frequent, until at last it is permanent. Various kinds of treatment have been resorted to, but with little success, such as blistering, firing, etc. Should this fail, there is no hope but in the operation of nerving, which should only be performed in certain cases mentioned under the head of neurotomy.

Use HUMPHREY'S GILT EDGE HOOF OINTMENT to keep the hoof soft and pliable, thereby relieving the horse as much as possible from unnecessary pain.

OSSIFICATION OF THE LATERAL CARTILAGES.

SIDE BONES.

This is a transformation to bone of two projections of cartilage or gristle, springing from each side of the coffin-bone posteriorly, and known as the lateral cartilages. It arises from concussion, and will rarely be found in any but contracted feet.

The treatment in these cases is only palliative, as the disease cannot be eradicated by any course of medical treatment. The first endeavor should be to expand the heels by applying poultices to the feet, together with HUMPHREY'S GILT EDGE HOOF OINTMENT.

BRONCHITIS.

The larynx (upper part of the windpipe), the trachea (windpipe), and the bronchial tubes (branches from the trachea into the lungs for the passage of air), are lined by one continuous membrane, called the mucous membrane, which secretes a thin mucous substance that always keeps the parts soft and moist. When this membrane becomes inflamed, the disease is

named according to its location. If it is confined to the larynx, it is termed laryngitis; if to the windpipe, trachitis; and if to the bronchial tubes, bronchitis. The trachea and bronchia are rarely diseased separately, the inflammation generally extending from one to the other. We shall therefore treat of bronchitis as embracing trachitis likewise. Even this disease rarely exists unmixed with others, in consequence of which it is often overlooked or confounded with other diseases of a pulmonary character.

Bronchitis is generally preceded by a shivering fit; mouth hot, with more or less saliva; discharge from the nose; cough; sore throat; fever; short breathing; loss of appetite; accelerated pulse; and membrane of nose and eyelids reddened.

In treating this disease it is much safer to call in the veterinary surgeon, in consequence of the difficulty which the ordinary observer will experience in distinguishing it from other pulmonary diseases, and from the fact that the treatment varies with the changes that take place in the progress of the disease. It is not necessarily fatal; yet the most trfling neglect or mistake in treatment may make it so. The average loss, if

proper treatment is pursued, is not more than five per cent. Resort should never be had to bleeding in any form which the disease may assume, although such treatment has been recommended by some authorities.

If much fever is present give HUMPHREY'S FEVER REMEDY until the action of the heart diminishes. Then give HUMPHREY'S NERVE REMEDY, alternately with the fever remedy. Apply to the throat, sides and along the spine, strong mustard mixed with water to the consistence of cream, which may be repeated as often as necessary. HUMPHREY'S SPAVIN BLISTER is also recommended. After the inflammation has subsided give HUMPHREY'S CONDITION POWDERS as directed.

This course of treatment is perfectly safe in the hands of any horseman, though it will not reach all stages of the disease; nor can any general directions be given better calculated to warrant a successful issue in these cases.

INFLAMMATION.

In order to fully understand the various diseases to which important organs are subject, a few remarks regarding the nature of inflamma-

tion, its progress, etc., may not be out of place in a work like the present.

Inflammation is a state of altered nutrition, an increased vascularity and sensibility of the parts involved, together with a tendency to change of structure. The symptoms are swelling, pain, heat, and redness. The redness is in consequence of a redundancy of blood in the inflamed part, which distends the small capillaries with red particles of blood. When the inflammation is acute the parts present a bright red or crimson hue; when it is chronic, they are of a dark or purplish-red color. As the various terms employed by authors to indicate the various degrees are uninteresting to the general reader, no attempt at detail is here made.

The sensation of pain is mainly due to a stretching of the nerves by the distended blood-vessels. It differs in its character and intensity according to the parts involved, varying from a burning, throbbing, sharp and lacerating pain to a mere sense of heat, soreness and a dull sensation of pain. The heat in inflammation is supposed to arise from an increased quantity of blood in the inflamed part. The swelling in

the early stage is due to the increased quantity of blood.

HUMPHREY'S FEVER REMEDY acts directly upon the heart, arteries, and kidneys. It cures inflammation of the lungs, bowels, eyes and brain, sore throat, influenza and pink eye, and all congestions. HUMPHREY'S NERVE REMEDY acts directly on the nerve, heart and general system; cures cold, cough, staring coat, unhealthy skin, bloody urine, profuse stalling and weakness of the loin.

HUMPHREY'S BLOOD REMEDY acts directly on the blood and lymphatic system; cures swelled glands, farcy buds, discharges from the nose, grease, swelled legs, abscesses, ulcers and water farcy.

CANKER.

This arises from neglected thrush, often proving difficult to manage. It extends from the horny frog to the sensitive frog and sometimes to the navicular joint, involving the surrounding parts, and causing much alteration or destruction of the structures affected. It is by no means always a local disease, but is influenced by a morbid or unhealthy condition of the blood.

For treatment, use HUMPHREY'S BLOOD REMEDY. All loose horn should be removed, that the parts may be properly dressed. If taken early, the following wash may be used with success: Half an ounce nitrate of silver, in one pint of water, shake well together and use once a day. The feed should consist of green food, mashes and a little hay. Corrosive sublimate in solution has been used with decided advantage, as also chloride of zinc, chloride of lime, butter of antimony, tincture of myrrh, sulphate of copper and glycerine. Use HUMPHREY'S GILT EDGE HOOF OINTMENT, plentifully, to promote the growth of the foot; keep the bottom of the foot padded with oakum, kept in its place with splints between the shoe and the hoof.

SCRATCHES.

This disease, called also cracked heels, generally arises from neglect, such as allowing the horse to stand in a filthy stall. It is generally confined to the hind feet and consists in a swelling of the skin, causing in it one or more transverse cracks which discharge a sanious—thin, serous and reddish—matter at times; while in other cases the parts are almost dry, but scurfy.

For treatment, wash well with soap and water, apply HUMPHREY'S CARBOLIC HEALING POWDER; give one of HUMPHREY'S PHYSIC BOLLS, followed by HUMPHREY'S VETERINARY BLOOD REMEDY, and the malady will soon disappear.

GREASE HEELS.

This is the result of weakness in the capillary vessels on the feet and legs and is often preceded by dropsical effusions, which frequently exist upon the leg as far as the hock or knee. Common-bred horses are supposcd to be more liable to this disease, while thorough-bred are comparatively free from its attacks.

The principal causes are, doubtless, over-feeding and want of exercise; since we generally find the disease associated with a plethoric condition of the animal. As symptomatic, the skin at first is hot, red, swollen and tender, and discharges a white, offensive matter of a greasy feeling. As the disease advances, this discharge thickens into the form of tears and becomes hard, presenting a grapy appearance. Abscesses are sometimes formed about the heels, causing the sloughing away of a large portion of them.

This disease requires constitutional as well as

local treatment. Give internally one of HUMPHREY'S PHYSIC BOLLS; after the horse has physiced, give HUMPHREY'S BLOOD REMEDY or HUMPHREY'S CONDITION POWDERS as directed, for a tonic. Use HUMPHREY'S CARBOLIC HEALING POWDER on the sores and a speedy recovery may be looked for.

SWOLLEN LIMBS.

Swollen legs are often caused by a dropsical condition of the blood.

TREATMENT.

Give one of HUMPHREY'S PHYSIC BOLLS, followed by giving a box of HUMPHREY'S CONDITION POWDER as directed, night and morning, and HUMPHREY'S VETERINARY BLOOD REMEDY every day at noon. Give soft food with moderate exercise every day.

WATER FARCY.

This disease is similar to *œdema*, but makes its appearance above the hock and extends downward. The skin is hot and extremely sensitive to the touch; so much so that the animal throws the leg upward and outward, as though to escape

torture. The veins of the leg are full and corded.

For treatment, apply warm fomentations to the parts affected, and give one of HUMPHREY'S PHYSIC BOLLS, followed by giving HUMPHREY'S BLOOD REMEDY as drected, allowing no corn. Hand-rubbing and daily exercise will be necessary.

CRIB-BITING.

This is a very unpleasant habit, and a considerable defect, although not so serious as it is often represented. The horse lays hold of the manger with his teeth, violently extends his neck, and then, after some convulsive action of the throat, a slight grunting is heard, accompanied by a sucking or drawing in of air. It is not an effort at simple eructation, arising from indigestion; it is the inhalation of air. It is that which takes place with all kinds of diet, when the stomach is empty as well as when it is full.

The effects of crib-biting are plainly perceptible. The teeth are injured and worn away and —in an old horse—to a very serious degree. A considerable quantity of grain is often lost, for the horse will frequently crib with his mouth full of it, and the greater part will fall over the edge

of the manger. Much saliva escapes, the loss of which must be of serious detriment in imparing digestion. The crib-biting horse is notoriously more subject to colic than other horses, and that of a kind difficult of treatment and peculiarly dangerous. Although many a crib-biter is stout and strong and capable of all ordinary work, these horses do not generally carry as much flesh as others, and have not their endurance; on these accounts crib-biting has been, (and very properly), decided by the highest authority, to be unsoundness.

It is, moreover, one of those tricks which are exceedingly contagious. Every companion of a crib-biter in the same stable, is likely to acquire the habit, and it is the most inveterate of all habits. The edge of the manger will in vain be lined with iron, or with sheep skin, or with sheepskin covered with tar or aloes, or any other unpleasant substance.

A strap buckled around the neck, by compressing the windpipe, is the best means of preventing the possibility of this trick.

WIND-SUCKING.

This closely resembles crib-biting and arises from the same causes; the same purpose is ac-

complished and the same results follow. The horse stands with his back bent, his head drawn inward, his lips alternately slightly opened and then closed, and a noise is heard as if he were sucking. It appears quite probable, judging from the same comparative want of condition and the flatulence noted in connection with the last habit, that either some portion of wind enters the stomach, or there is an injurious loss of saliva.

This vice diminishes the value of the animal nearly as much as crib-biting; it is equally as contagious and inveterate. The only remedies —and they will seldom avail—are tying the head up except when the horse is feeding, or putting on a muzzle with sharp spikes toward the neck, which will prick him whenever he attempts to rein his head in for the purpose of wind-sucking.

NOT LYING DOWN.

It occasionly happens that a horse will seldom or never lie down in the stable. He sometimes continues in apparent good health and feeds and works well; but generally his legs swell and he becomes fatigued sooner than another horse. If it is impossible to let him loose in the stable, or to

put him into a spare box, nothing can be done to obviate the difficulty. No means, gentle or cruel, will force him to lie down. The secret is that he is tied up, and either has never dared to lie down through fear of the confinement of the halter, or he has been cast in the night and severely injured. If he can be suffered to range the stable, or have a comfortable box in which he may be loose, he will usually lie down the first night. Some few horses, however, will lie down in a stable and not in a loose box. A fresh, well-made bed will generally tempt the tired horse to refresh himself with sleep.

It may be observed in this connection, that the basis of support afforded by the four extremities is so considerable in the horse that he is able to sleep in a standing position, and some horses have even been known to preserve their health, strength and condition, although they were never known to lie down. At the same time it is undeniable, that an animal that will quickly lie down and take his rest, as a general rule, preserves his condition and is better fitted for exertion.

STRANGLES.

This is but another form or stage of laryngitis. The throat becomes enormously swollen, the

swelling extending under the jaws and up to the very ears, threatening suffocation; then respiration becomes much disturbed; the flanks heave violently, and the breathing can be heard at a considerable distance; the animal begins to sweat from his frequently convulsive efforts to breathe, and if not speedily relieved dies a most violent death.

Life may be saved by the veterinary surgeon at this crisis by the operation of tracheotomy, that is, by opening the windpipe and inserting a tube through which the animal may breathe instead of through the nose. This operation affords instant relief, and gives an opportunity to apply remedies to the diseased throat, which in a few days usually effects a cure, when the tube may be removed. The author has never lost a case where he has resorted to this operation.

The early treatment of this disease is to give HUMPHREY'S FEVER REMEDY; poultice the throat well with flaxseed meal, commonly called cake-meal or oil-cake. Mustard plasters are also very effective, and steaming the nostrils frequently affords relief. As soon as the swelling permits, it should be lanced; and when it has once discharged freely, the animal may be con-

sidered out of danger, provided proper care be taken to guard against a relapse. A seton applied between the jaws often gives relief. These cases are safer in the hands of a competent surgeon. Under no circumstances, in this disease, should the animal be bled.

WOLF TEETH

Are supernumerary just in front of the molar, and we are often asked to remove them, as sometimes they do much harm. They are easily removed, and if possible should always be extracted with a pair of small forceps; they are sometimes punched out or broken off with the punch. This is a barbarous operation and should not be tolerated. The author believes the wolf-tooth often interferes with the eye, by exerting some influence on the opthemic division of the fifth nerve. He has known cases where colts were nearly blind, and when these teeth were properly extracted their eyesight was entirely restored in a very short time, with no other treatment.

ROARING AND WHISTLING.

There are different stages of these diseases, arising from a thickening of the windpipe, or of

the membranes of the larynx, rendering the passages smaller at the diseased parts. These diseases are of a catarrhal character, ulceration of the glottis (a portion of the larynx), is also a cause of roaring.

If these diseases are caused by tight reining, the bearing rein should be left off; if they arise from other causes, there is but little prospect of benefitting the animal, except in cases where the thickened parts are in an inflammatory condition, when relief will be afforded by the application of HUMPHREY'S SPAVIN BLISTER, Give HUMPHREY'S BLOOD REMEDY.

BROKEN WIND.

The cause of broken wind or heaves has never been satisfactorily ascertained; some writers attributing it to functional derangement of the digestive organs, others to rupture of the air-cells of the lungs, while yet a third class to a spasmodic action of the diaphragm—a muscle dividing the chest from the abdomen. In this disease there is a short, dry cough, which is characteristic and familiar to all practised ears.

It is a singular fact, well known to all Western horse-owners, that this disease has no existence

on the prairies of Indiana, Illinois and other Western States; and broken-winded horses that have been taken to those sections soon get well, and remain so.

The symptoms of this disease are, a peculiar, double-bellows motion of the flanks; respiration quicker than natural; a short, peculiar cough; and frequent passing of wind.

In its treatment the digestive organs should be kept in as healthy a condition as possible. The throat should be examined, and if by merely rubbing the sides of the throat a cough is excited the chances for a cure are favorable; but if the windpipe requires a squeeze in order to produce a cough, there is little use in attempting a cure. Use upon the throat HUMPHREY'S SPAVIN BLISTER. Give internally HUMPHREY'S CONDITION POWDER.

The benefits of this course of treatment have been very marked in the author's practice. In all cases no hay should be allowed, but wheat or oat straw, dampened with salt and water, will be found of great advantage.

CHRONIC COUGH.

This arises from various causes, and is present

in a number of diseases. It is often symptomatic of some affection of the lungs and air passages, and it sometimes exists apparently as an independent affection, the animal thriving well and retaining unimpaired his appetite and spirits.

If it arises from irritation of the larynx, or upper part of the throat, blister the throat with HUMPHREY'S SPAVIN BLISTER; if from worms in the stomach or intestines, treat as directed under the head of "Worms." If it exists without any apparent connection, or as the termination of disease previously existing, give, every night and morning, a bran mash and HUMPHREY'S CONDITION POWDERS, as directed on the box. Green food, as carrots, potatoes, turnips, or parsnips, should be given when procurable.

ENTERITIS, OR INFLAMMATION OF THE BOWELS.

This disease is sometimes preceded by a shivering fit; there is loss of appetite; hot skin; continued restlessness; mouth hot and dry; membranes of the nose and eyes much reddened; pawing; the animal lies down and gets up frequently; kicks at his belly; looks frequently at his sides; no cessation of pain; pulse hard, small

and wiry, often beating one hundred times or more a minute; respiration quickened; bowels constipated; dung small, hard and dry; extremities cold; and the urine highly colored and passed with difficulty. As the disease progresses, the intensity of the symptoms very much increases. The animal is now covered with perspiration, which is succeeded by a chilly state; the pulse becomes quicker; the belly begins to swell; the entire system becomes prostrated and the animal dies, frequently in the most violent manner.

These cases require prompt and active treatment, for the disease runs its course very rapidly, often terminating in the course of ten or twelve hours. If the costiveness yields early, the pulse becomes less frequent, soft and full; the extremities regain a moderate temperature, attended with remission of pain, and the case will be likely to have a favorable termination. It is important that this disease should be distinguished from an attack of colic, since the symptoms of one very much resemble those of the other; the pulse, however, is the surest guide in distinguishing these diseases.

In this disease copious bleedings are neces-

sary. A large opening should be made in the jugular vein and from six to eight quarts of blood taken, the quantity varying with the size and condition of the animal; the hardened dung should be removed by injections of soap and water, or an injection of two gallons of water with six ounces of tincture of arnica. One of HUMPHREY'S PHYSIC BOLLS may now be given. To relieve the pain, give HUMPHREY'S COLIC CURE. To relieve the fever, give HUMPHREY'S FEVER REMEDY. The injection should be continued throughout. Soft mashes and new grass if obtainable may be given sparingly, but no hay, until the bowels are opened; give linseed tea to drink instead of water.

The animal should not be worked for some days after recovery, as the disease is liable to return if he is put to work or exposed too soon. An attack of this character does not necessarily render the animal less useful or valuable after his restoration to health.

PERITONITIS.

Differs but little from enteritis. The horse is more affected with pain; the pawing, rolling and kicking at the belly are most violent. The eye

is wild in appearance; tenderness is evinced on pressing the abdomen; the pulse is full and throbbing; the dung is small and hard and covered with a slimy substance. The same course of treatment should be pursued as recommended for enteritis.

OSTITIS.

This is an inflammation of the bone, occasioning lameness of an obscure nature, and is one of the most difficult of all cases of lameness to detect. Where it occurs in the cannon-bone it is often mistaken for a thickening of the integuments.

TREATMENT.

Give HUMPHREY'S BLOOD REMEDY; use bandages dipped in lead water; rest the animal and give daily half-drachm of iodide of potassium dissolved in a pail of water. This treatment will usually prove successful if perseveringly adopted.

BONE SPAVIN.

This is a disease of such common occurrence that almost all horsemen think they fully understand its nature, pathological condition and treatment. It is generally regarded by veteri-

nary authors as a very serious injury, destructive to the utility of the animal and very frequently reducing his value essentially in consequence of the blemishes. Where, however, there are no outward blemishes, as is the case in four out of every five spavined horses, the price of the animal is not affected, unless he is lame, since the disease is not discovered. There are, at this day, thousands of spavined horses traveling our roads, in not one of whom would the most experienced horseman the world ever produced be able to determine the fact so long as the animal lives. In all such cases no external enlargement is found, but, on the contrary, the limb is clean and smooth. In the absence of enlargement or spavin-bunch—as it is sometimes called—on the inside of the hock-joint, horsemen are unwilling to believe that spavin exists. The books, indeed, teach us to look there, and there only, for it; but the author's experience teaches him that the enlargement, where any exists, appears almost as often upon the front part of the hock as it does upon the inside.

Spavin generally arises from a strain, jar or blow upon the hock-joint, causing an inflammatory condition of the cartilaginous cushions

which cover the articular surfaces or points of union of each bone, or of the ligaments which surround the joints and bind the bones together; sometimes, indeed, both are involved. As this inflammatory condition is the exciting cause, spavin, (an osseous deposit), or ulceration of the parts, speedily follows.

As symptoms, the horse is very lame on leaving the stable, but when he is warmed up the lameness passes off; the leg is drawn up quickly with a kind of jerk and there is a peculiar, hard tread, which can only be distinguished by close observation. Where the bones are all united together, whether there is external enlargement or not, there is a peculiar twist of the heel outwards, which is more readily observed in the walk and which the author has always found an infallible symptom of complete anchylosis.

Both spavin and ring-bone are incurable diseases. The lameness may be removed, but the disease, when once established, cannot, because the elasticity, mobility and function of the joint are all destroyed in proportion to the extent of the disease. The spavined animal, therefore, comes down with a hard, jarring tread. The removal of the lameness depends upon the perfect

union or solidifying of the diseased bones. In the acute inflammatory cases, nature herself, unaided, works this change, and the animal recovers from the lameness with a stiff joint; but in the second or ulcerative stage, assistance is required. We, therefore, endeavor to excite an active inflammation in the joint in order to overcome this ulcerative process, and induce new deposits of bone to be thrown out. Many modes have been adopted to secure the desired end, some of which are of a most barbarous character; sharp instruments have been struck with considerable force into the joint, creating a terrible sore, which soon checks the ulceration. This practice, although often successful, is unnecessarily severe and cruel in the extreme. All kinds of caustic applications have been used, many of which have destroyed both the disease and the animal. Blistering the parts with HUMPHREY'S SPAVIN BLISTER, repeating the blister in two weeks, the action being kept up for four or six weeks, often proves successful. Firing is also practised. Setons in the hock are frequently used.

RING-BONE.

This is a disease of the same nature as spavin;

its locality alone giving it a different name. The same alterations of structure takes place; the same termination follows, and the same treatment is indicated. Blister with HUMPHREY'S SPAVIN BLISTER and repeat the application in two weeks. Contraction of the coranary ligaments is sometimes mistaken for ring-bone and the horse is severely tortured in consequence. Contraction of this ligament produces a bulging of the soft parts around the coronet, causing the hair to turn downward and inward upon the hoof, giving it much the appearance of ring-bone. As, in all such cases, the heels are pressed close and painfully together.

SPLINTS.

This is an exostosis or bony enlargement, arising from blows, and is situated upon the cannon-bones.

Splints are common, although they are not always visible to the eye, having, perhaps, spread over a large surface of bone, or become flattened, which circumstance has given rise to the opinion among horsemen that old horses are not affected with splints. This, however, is a mistake. The nature of a splint is very similar to that of a

spavin, but its course is somewhat different. When the injury is first received, the enlargement becomes quite prominent; but as time advances, it sometimes disappears from view, even without the aid of man, spreading itself between the cannon and splint bones, thus lessening its size externally.

Splints are not regarded as unsoundness, unless they cause lameness—which rarely occurs—particularly if they are situated near the middle of the bone; but if they are situated either at the upper or lower portions, or heads, lameness is most always the result. This is easily explained; the bone, it will be observed, curves from above downward and outward, so that the lower extremity sets off from the body of the cannon-bone; the upper heads, where it unites with the bones of the knee and hock, slant or bevel inward, and as the weight of the animal is thrown upon them, the upper heads are forced outward, while the lower ones are thrown inward. By this simple arrangement a rocking motion of these bones takes place, so that at the centre there is very little mobility, and if the injury is above it causes lameness in consequence of tension; if below, from pressure; but if it is in the

centre, it seldom causes lameness at all, though the injury is greater.

When lameness occurs, the union of the bones should be hastened by increasing the inflammatory action; this is best done by active blistering, which soon removes the lameness.

The author has never treated a splint without making a complete cure by using HUMPHREY'S SPAVIN BLISTER and giving the splint a good hand-rubbing every day, after the acute inflammation caused by the blister has subsided.

STIFLED, OR DISLOCATION OF THE PATELLA.

This is by no means uncommon. It occurs in many ways, and in some very simple ways, from a false step in traveling, or while standing in the stall where there is an abrupt offset in the floor—the horse stepping off of it. It occurs often with horses that are sick and debilitated.

Symptoms are very plain; the animal cannot extend the limb forward and drags it after him.

TREATMENT.

Get the leg into its natural position as soon as possible. To do this, place a rope around the pastern and have an assistant pull the leg for-

ward, while you take hold and manipulate the stifle-joint. It will generally go to its place quite easily. When it gets into its place, try and keep it so by tieing the rope to a collar. Apply HUMPHREY'S SPAVIN BLISTER over the whole surface of the patella joint.

CURB.

A curb is an enlargement at the back part of the hind leg a little below the hock, due to a sprain or rupture of the calcaneocuboid ligament, or irritation of the sheath of the tendon. The exciting causes are hard and fast work, or forcibly backing an animal.

TREATMENT.

It can generally be successfully treated without leaving a blemish. Blister the curb with HUMPHREY'S SPAVIN BLISTER; repeat the blister in ten days. After blistering the second time and the acute inflammation has partially subsided, give the curb a good hand-rubbing, morning and night and you will generally effect a complete cure. If this treatment should fail, you will have to have recourse to firing.

STRAINS OF THE KNEES.

Strains of this joint occur in young horses while being broken into harness more often, probably, than at any other period of the animal's life. This results from the tenderness of the parts at that time—not one in twenty having them having arrived at maturity. These strains often prove troublesome to manage, and occasionally leave a stiff knee as the result.

TREATMENT.

Bleed from the plantar, or plate vein; apply warm fomentations to the part; when the inflammation is reduced, bathe the knee twice a day with HUMPHREY'S GOOD SAMARITAN. If this does not effect a cure, blister the knee with HUMPHREY'S SPAVIN BLISTER.

INFLAMMATION OF THE BLADDER.

Inflammation of the bladder, or cystitis, is a disease of comparatively rare occurrence in the horse, and generally is found in connection with other diseases. It is commonly supposed to occur more frequently in mares; although the author's experience has not confirmed this supposition.

The symptoms are continual emissions of urine in small quantities; the moment it enters the bladder it is again expelled, but voided with much straining; pulse quickened; pawing; the animal looks imploringly at his flanks; and upon passing the hand into the rectum the bladder will be found contracted and hard as a ball, being also hot and tender.

For treatment—Back-rake the animal in the first place and then throw up injections of water, adding to every gallon three ounces of opium. Give one of HUMPHREY'S PHYSIC BOLLS.

Bathe the loins with HUMPHREY'S GOOD SAMARITAN; rub it well in; give half a drachm of fluid extract of belladonna, three times a day. Give plenty of flax seed tea; if the animal refuses to drink it, drench him with it. No hay must be given until twenty-four hours after he becomes convalescent. This is one of the most dangerous diseases to which the horse is subject.

RETENTION OF URINE.

This disease, technically known as spasm of the neck of the bladder, is found more frequently as an attendant upon other diseases than as an independent affection. It frequently occurs in

colics as an accompanying symptom, thus misleading the ordinary observer in his judgment of the disorder.

The most common symptom is frequent but unsuccessful efforts to stale. This, however, must not be depended upon too strongly, as it will sometimes be observed in horses that are comparatively sound in these organs, particularly in those that have been well cared for. In such cases this temporary retention of urine arises from a dislike on the part of the animal of spattering his legs in voiding his water; hence he will often retain it in the bladder, though painful to him, until the litter is placed under him, when he at once stretches himself and the urine flows freely and copiously. This fact has given rise to a superstitious notion among horsemen that there is some peculiar virtue in the straw to cause this sudden cure; as a consequence, we frequently hear the remark: "Put some straw under him—that will cure him," etc.

If, however, retention of urine arises from disease, the straw posseses no magic charm to afford relief. In such instances the animal manifests but little pain and rarely lies down. On passing the hand up the rectum or fundament,

the bladder, which is easily felt, will be found very much distended with urine.

The services of a regular veterinary practitioner will be required in the treatment of this disease, as the bladder must be at once evacuated, which can in most cases be accomplished by means of an instrument called the catheter, which is not commonly found in the hands of any but the qualified snrgeon. This desired evacuation can in some instances be produced by careful manipulation. Back-raking is very necessary in these cases, and injections of soap and water should be freely used. Unless the bladder is speedily emptied, it swells and bursts, causing a fatal termination. Fomentations of hot water to the abdomen, and pressure of the hand upon the bladder will be of assistance in enabling the animal to void the urine.

Give HUMPHREY'S COLIC CURE to relieve the pain, it will always be found beneficial, followed by HUMPHREY'S FEVER REMEDY.

BLOODY URINE.

This disease, known also as hematura, frequently arises from strains across the loins, violent exercise, unwholesome food, calculous con-

cretions in the kidneys, etc. The appetite is not usually impaired, nor is any marked degree of fever present. The color of the urine first calls attention, in voiding which the animal appears to strain slightly. If the bowels are at all costive, injections should be at once thrown into the rectum; linseed tea should be given as a drink, and apply HUMPHREY'S SPAVIN BLISTER to the loins; repeat in five days. Give internally one of the following, once a day: one drachm iodine, five drachms powdered licorice, made into a boll. Give an entire change of diet. Give HUMPHREY'S FEVER REMEDY as directed, until fever abates.

FALSE QUARTER.

This is an imperfect formation of horn at the quarter of the hoof, and is divided by a seam from the top to the bottom. It is the result of injury from quitter and other diseases, rendering the heels weak, and requires the protection of a bar shoe, which should never bear upon it. In such cases have the foot treated by a competent horseshoer, and use HUMPHREY'S GILT EDGE HOOF OINTMENT.

FOUNDER.

Founder, or laminitis, is an inflammatory condition of the *laminæ* of the feet, which are the most sensitive parts of these important appendages. Founder is said to be produced by various causes, such as hard driving, watering when warm, standing in a draught of air, or upon plank floors, and many others.

The symptoms are a full, quick pulse, from sixty upwards; accelerated respiration; the fore-feet are hot and tender, the animal for relief throwing his body back upon the hind legs, extending the forelegs until he rests upon the heels, and sometimes lying down, particularly if the hind feet are involved; the animal also manifests much pain.

If the animal is in full condition, two quarts of blood should be taken from each of the forelegs; HUMPHREY'S PHYSIC BOLL should be given, followed by HUMPHREY'S VETERINARY FEVER REMEDY. Poultices of flax seed meal should be applied to the feet for several days; injections of soap and water also ought not to be neglected; apply HUMPHREY'S SPAVIN BLISTER around the leg, just above the hoof. By this

treatment the animal is usually well again in a week, or even less.

OPEN JOINTS.

These are generally the result of a punctured wound; the capsular ligament that surrounds the joint and confines the joint-oil within its proper limits being thereby penetrated. These accidents are often attended with serious results, from the inflammation that is likely to arise from such an injury.

For treatment—Sprinkle on the wound, several times a day, HUMPHREY'S CARBOLIC HEALING POWDER. It may take several days to close the wound, but this is as safe and reliable a method as could be pursued. Give HUMPHREY'S PHYSIC BOLL followed by HUMPHREY'S FEVER REMEDY.

SWEENIE.

This disease has been the occasion of the infliction of much cruelty and unnecessary torture upon the horse. The symptoms which accompany its existence are but sympathetic effects, or atrophy of the muscles of the shoulder. The attention of the horse owner is directed to a wasting away or lessening of these muscles, which from want of action naturally become smaller or

contracted; upon the animal regaining the natural use of the limb, the muscles are again developed, as the muscles of the blacksmith's arm by the constant use of the sledge hammer. Cases called sweenie are generally the result of injury in some remote parts, as the knee, the foot, etc. When the animal picks up the foot clear from the ground, it may be depended upon that the injury is not in the shoulder; if, however, the leg drags with the toe on the ground, the injury may be looked for in that locality. It is, however, more easy to decide a case of shoulder lameness than any other to which the limb is liable.

Blister the parts affected with HUMPHREY'S SPAVIN BLISTER.

SPRING HALT.

This disease has never been very satisfactorily accounted for by veterinary authors. It consists in a sudden spasmodic raising of the hind limbs, though it is said to have occurred in the fore-legs. No treatment as yet practised has proved entirely successful; though there are recorded isolated cases of spontaneous cure. As good a thing as can be done is to bathe the leg freely

twice a day with HUMPHREY'S GOOD SAMARITAN.

BLOOD SPAVIN, BOG SPAVIN AND THOROUGHPIN.

These constitute one disease, occasioned by an over-secretion of joint-oil in the hock joint, which causes a distention of the capsular ligament, or *bursa*, presenting soft, puffy swellings about the joint. Blood and bog spavin appear on the front and inside of the joint; while thoroughpin extends through from one side of the joint to the other. These diseases are so common and so well marked as not to be easily mistaken.

The causes are violent exercise, throwing the animal upon his haunches, running, jumping, etc.

It seldom causes lameness. If requisite, blister with HUMPHREY'S SPAVIN BLISTER.

FRACTURES.

Experience has established the fallacy of destroying every horse that meets with a fractured limb. Fractures may occur in any bone of the body, and yet a perfect union of the parts may

take place, provided the fracture is a simple one; compound fractures even, are occasionally united.

For treatment—The animal should first be placed in the most comfortable position and the parts adjusted as nearly as possible, retaining them by proper bandages, splints, etc.

Fractures of the skull sometimes require the operation of trephining, in order to replace the parts perfectly; after which the bowels should be opened by giving one of HUMPHREY'S PHYSIC BOLLS and the animal kept on moderate diet.

Fractures of the *pelvis*, or haunch bones, will, in nine cases out of ten, become united by proper management, no matter how bad the crushing, and the animal may again be rendered serviceable. The author never hesitates to treat fractures of these bones in horses that are of sufficient value to warrant it. Indeed, union of the parts in such fractures will often take place, even if the animal be turned into a field without any treatment; though, perhaps, more deformity will be left than if proper care had been exercised. The horse, if active and high-strung, should be kept upon his feet by tying up the head short for several days, and then the slings may be placed

under him; if this is done at first, the animal being full of fire throws himself off his feet, and all efforts to remedy the fracture will prove a failure. From six to eight weeks, according to the age of the animal, are necessary to complete the union of the parts.

Some practical knowledge is requisite, in order to discriminate cases of fracture of the limbs that are likely to be successfully treated; but fractures of the haunch bones rarely fail to unite, with proper management. The animal should be kept on bran mashes, gruel and green food during the treatment.

There are several varieties of fracture, called simple and compound, comminuted and complicated. *Simple*, is that in which the bone is broken and the muscles and skin are not much injured. *Compound*, is that in which the bones enter the muscles and pass through the skin. *Comminuted*, is that in which the bone is broken and shattered. *Complicated*, is that in which important vessels or an articulation is injured.

DISEASES OF THE HEART.

Diseases of the heart are less understood by the members of the veterinary profession gen-

erally than any other class of diseases (with, perhaps, one or two exceptions), to which horses are subject. This want of information in this country, is attributable to the comparative infancy of veterinary science, the obscurity of the symptoms by which these diseases are characterized, and the consequent confounding of them with other diseases.

CARDITIS.

This is an inflammation of the muscular structure of the heart, comparatively rare, or at least supposed to be so.

In this affection the animal will be found lame, generally in the off foreleg, but upon examination no cause will be found sufficient to account for it. This lameness may appear and disappear several times previous to the attack manifesting itself in a more positive form, leaving the impression that the lameness was rheumatic. We next find the animal refusing his feed; his heart palpitates violently; he occasionally gasps and gnashes his teeth; pulse full, hard and quick; there is a wild expression of the eyes; respiration quickened; mouth hot and dry; and the temperature of the legs varies from moderate to cold.

For treatment—Cold water should be frequently given; take one drachm of white hellebore and divide it into five powders, (or give HUMPHREY'S VETERINARY NERVE REMEDY, as directed, which is preferable); give one of these on the tongue every three or four hours. Bleeding has been recommended, but the author has not witnessed any advantages from it, and therefore would on no account advise it.

DISEASES OF THE HEAD.

The disease commonly called big-head, so far as the author can learn, seems to be peculiar to the Western and Southern States. It appears, from the rather unsatisfactory accounts at the author's command, to originate in the osseous, or bony structure of the face. The bones become swollen and are represented as presenting a soft, spongy, or cellular appearance, the cells being filled with a substance like jelly.

The symptoms are a swelling of the bones of the face, from the eye to the nose; puffy swelling about the limbs; stiffness about the joints; pulse slightly accelerated and soft; coat rough and staring, with considerable debility.

The treatment usually practiced has been to make an incision through the skin and insert a small quantity of arsenic into the wound; or else to score the face with a red-hot iron; which latter mode is said to have effected a perfect cure in many cases. Neither of these operations however, strikes us as being very scientific. The course pursued by the writer is to rub the swollen parts well, once a day, with the following ointment: of mercurial ointment one ounce, and of iodine ointment two ounces; mix well together for use. Give internally, at the same time, HUMPHREY'S VETERINARY BLOOD REMEDY, night and morning. The animal must be kept in a dry, well ventilated stable and the body kept warm so long as this medicine is given.

INFLAMMATION OF THE BRAIN.

This disease, known also as phrenitis, or more generally, mad staggers, arises from various causes, such as blows, over-feeding and little exercise, too tight a collar, etc.

A heaviness of the head is first noticed; an unwillingness to move about; the lining membrane of the eyelids much reddened; appetite indifferent or lost; a peculiar dullness of the eyes;

and finally, delirium or madness. The animal becomes unmanageable; beslavers all that comes within his reach, whether man, horse or anything else; and plunges violently about the stall or wherever he may chance to be.

As this disease is occasioned by a determination of blood to the head, it is necessary to use the lancet; this should be done freely, and that before the delirious stage comes on, otherwise it cannot be done properly or beneficially. Cloths wet in cold water should be applied to the head; or, what is better, bags of broken ice. Open the bowels with HUMPHREY'S PHYSIC BOLLS. Give also injections of castile soap and water. Give no food for twenty-four hours; but small quantities of water may be frequently given. After the recovery of the animal he should be fed very sparingly, and not exposed to the hot noonday sun.

If the occasion of the attack be a tight collar, the remedy is simple and easy; if from over-feeding, the quantity of food should be lessened.

While convalescing give HUMPHREY'S NERVE REMEDY.

MEGRIMS.

This is a sudden determination of blood to the

head, generally attacking horses while at work or in harness upon the road. Those of a plethoric character are the most subject to these attacks.

The horse suddenly stops in the road, shakes his head, and sometimes goes on again; at other times he falls in a state of unconciousness, the whole system appears convulsed, with the eyes wild in appearance and constantly rolling.

Bleeding upon the appearance of the first symptoms gives almost immediate relief; after which the bowels must be opened, for which purpose give one of HUMPHREY'S PHYSIC BOLLS; bran mashes should be given for a few days.

These attacks may be prevented in cases of horses subject to them, by moderate feeding and driving, and in warm weather by keeping the forehead shaded by a canvas or cloth hood elevated on a wire frame-work about two inches from the forehead, so as to protect the brain and admit a free passage of air between the two. Give HUMPHREY'S NERVE REMEDY as long as there are any symptoms of the malady.

STOMACH STAGGERS.

This disease arises principally from over-feeding. The animal appears dull and sleepy, with a

disposition to pitch forward; stands with his head resting against the wall, manger, or the like, or, if at pasture, against a tree; if he is led out of the stable this will be observed as an involuntary action, in consequence of which the head is often much cut and bruised by coming in contact with hard substances. There is constipation of the bowels; pulse scarcely changed from the usual standard; as the attack is severe the breathing becomes more labored.

The whole cause of the disease being, apparently, in the distended condition of the stomach from the presence of undigested food, all food should be removed from the manger, and none given for forty-eight hours. Give one of HUMPHREY'S PHYSIC BOLLS; if the bowels should not move freely in twenty-four hours give one-half pint of raw linseed oil. Injections of soap and water should be given until the bowels are opened; or, what is far preferable when convenient, tobacco-smoke injections. Two drachms of the extract of belladonna dissolved in a pail of water, given to drink once a day for a week, will prove beneficial. Bleeding in these cases is, as a general rule, unnecessary and uncalled for. Food should now be given very sparingly; and

no corn should be given at any time to the animal after such attack, in consequence of its tendency to heat the blood, and produce a plethoric condition of the system. When the animal is convalescent, give HUMPHREY'S CONDITION POWDER, as per directions.

BITING.

This is either the consequence of natural ferocity or a habit acquired from the foolish and teasing play of grooms and stable-boys. When a horse is tickled and pinched by thoughtless and mischievous youths, he will at first pretend to bite his tormentors; by degrees he will proceed further, and actually bite them, and very soon after that he will then be the first to challenge to the combat, and without provocation will seize the first opportunity to grip the careless teaser. At length, as the love of mischief is a propensity too easily acquired, this war, half playful and half in earnest, becomes habitual to him and degenerates into absolute viciousness.

It is seldom that anything can be done in the way of cure. Kindness will aggravate the evil, and no degree of severity will correct it. Biters have been punished until they have trembled in

every joint and were ready to drop, but this treatment scarcely ever cures them. The lash is forgotten in an hour, and the horse is ready and determined to repeat the offence as before. He appears unable to resist the temptation; and in its worst form biting is a species of insanity.

Prevention however, is in the power of every proprietor of horses. While he insists upon gentle and humane treatment, he should systematically forbid this horse-play.

LAMPAS.

This term is used to designate a fullness or swelling of the bars or roof of the mouth, caused by the cutting of the teeth. Lampas will be found in all colts, although in many the slight inconvenience occasioned by it attracts little or no attention. In others however, the great tenderness of the parts affected causes the animal to refuse his food, in consequence of which he is by many compelled to submit to an operation equally cruel and unnecessary—that is no less than burning out the bars of the mouth with a red-hot iron, thereby destroying the functions of the part and leaving the mouth sore for some time afterward. This mode of treatment has

been practiced for years, and is even at the present day almost the only one in vogue, although it is of no practical benefit whatever, but, on the contrary, it is often very injurious. In the case of the child similarly affected, the humane practitioner seldom does more than to lance the gums. This certainly is a more rational mode of operating, and the author's experience convinces him that if the parts inflamed, in the case of the horse, be simply lanced, the swelling will soon subside and the horse partake of his food as usual. A common pocket-knife will answer the purpose quite well. If the horse refuses his food a few doses of HUMPHREY'S NERVE REMEDY will regulate the trouble.

WARTS

Are an abnormal growth. Warts are a thickening of the cuticle of the superficial layer of the true skin. They are common among horses and cattle. They may appear upon any part of the body. In horses they are most common upon the head, neck, groin, flank and sheath. They vary in size and shape, and may have a broad base or may have a neck; if the wart has a neck it can be corded and in that way can easily be got rid

of. The ligature is an old way of getting rid of them; tie a thread around them and draw it very tight, and if they are not too broad at the base they will fall off in a few days. If the wart is encrusted, cut a hole through the skin and take it out. The author's practice has been to apply arsenic; wet the finger, dip it into the arsenic and apply with friction on the wart every other day for three or four times. In about ten days the wart will fall off.

SEEDY TOE,

So called because it is generally found in the toe; the horn breaks and crumbles in small pieces like millet seed. It is due to an impaired secretion, or some direct cause, such as large clips in shoeing, which presses upon the sensitive parts, causing an abnormal secretion. It seldom causes lameness, but it is an unsoundness.

TREATMENT.

Remove the shoe, cut down the wall, and endeavor to remove all diseased parts; apply a pledget of oakum, saturated with GILT EDGE HOOF OINTMENT. If there is much irritation, apply oil-meal made into a warm poultice. It will

be found beneficial to blister around the top of the hoof with HUMPHREY'S SPAVIN BLISTER.

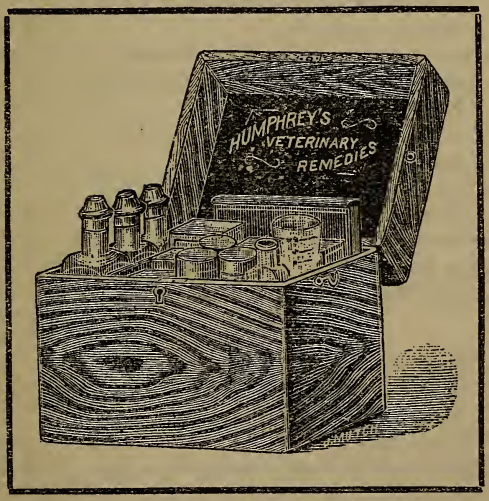
THRUSH

Is an irritation in connection with the frog, giving rise to an offensive sebaceous discharge which is characteristic of thrush. It is often seen in the hind feet, and sometimes in the front ones, in connection with the cleft of the frog; it impairs the secretion. The exciting cause is wet and filth, allowing dung to accumulate, irritating the parts. It is not so prevalent in cold climate. It is sometimes seen in connection with the navicular disease. A horse having the thrush does not actually go lame, but goes tender, and if he steps upon something hard he will flinch.

TREATMENT.

It is easily treated; if due to filth remove the cause; in some cases take off the shoe, and pare down the parts, remove all diseased parts if possible, and immerse the foot in a pail of water. Apply well into the cleft, HUMPHREY'S CARBOLIC HEALING POWDER, then apply oakum saturated or take one half box of HUMPHREY'S GILT EDGE HOOF OINTMENT, and one ounce of powdered

sulphate of copper, mix them thoroughly and apply twice a week into the cleft with a blade-shape piece of wood. This treatment, if used as directed, will cure any case of thrush.



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COWS.

METHOD OF SPAYING.

Cast the cow by means of the hobbles—same as used in casting horses—on her right side. I then apply to the nostrils a sponge saturated with concentrated sulphuric ether. When the animal is completely unconscious I slacken the

casting rope so as to free the limbs and prevent any pressure on the walls of the abdomen. By so doing I secure room enough to introduce a hand and arm, for the purpose of searching for the ovaries. The first stage of the operation consists in pinching up a fold of the skin on the left side, midway between the prominent bone of the haunch or pelvis and the last or posterior rib, about four inches below the transverse processes of the lumbar vertebræ. (back) Having divided the integuments to the extent of about five or six inches, I make a similar incision through the abdominal muscles, until the peritoneum (lining membrane of the abdominal cavity) is exposed. This membrane is then punctured by means of a beak-pointed knife, into which puncture I insinuate the knife, having a probe point, and then divide the peritoneum to the extent of the external incision.

The second stage of the operation commences with the introduction of the operator's right arm —he kneeling down in close contact with the cow's back. The hand is then passed within the brim or cavity of the pelvis. Having found the deep-seated or right ovary, it must be removed by laceration. I find that the best and most ex-

peditious way is to slip the other hand into the abdominal cavity. Then with the right hand seize the broad ligament at the base of the ovary; the left then clasps the ovary and in this way, by using trifling force, the ovary is detached or torn away.

The left ovary is then to be sought for, and an assistant depresses the edges of the incision. At the same time the operator having a firm hold on the ovary, brings it into view, so that it can be removed by means of a pair of blunt-pointed scissors.

The third stage of the operation is the process of uniting the abdominal muscles by means of stitches or sutures. A curved needle, armed with four or five threads of shoemakers' twine well bees-waxed, is to be passed through the abdominal muscles, without penetrating the peritoneum, at interrupted distances of one inch, more or less. Each suture is to be securely tied; one end of the same is to be cut close to the knot, the other is left long enough to protrude through the integumental incision. The skin or integument is then to be closed by means of ligature or metallic wire, leaving a small orifice at the inferior or lower region of the external incision, for the

escape of morbid matter. This completes the operation.

In the course of a week or ten days the deep-seated ligatures may be pulled away, and when the integument is well united, the external stitches may also be removed. The wound is healed by nature, and scarcely, if ever, requires any sort of dressing. If it should, use HUMPHREY'S CARBOLIC HEALING POWDER.

REMOVAL OF THE AFTER-BIRTH.

The retention may prove of great inconvenience after a time, from putrefaction, which is likely to ensue. Absorption of the products of that process from the surface of the uterine mucous membrane secures the establishment of a blood poison and putrid fever. No harm, however, may arise during a few days; but the removal should not be delayed beyond that time, more especially if the signs of decomposition have arisen.

Mechanical interference, from that state having commenced, may be required even at a much earlier period. Give two tablespoonfuls of HUMPHREY'S CONDITION POWDERS in a good, warm bran mash, with a handful of salt, when you first

see that the placenta (after-birth) has not been expelled, and in nine cases out of ten you will have no further trouble with the case.

In order to remove, by mechanical means, the hand is first lubricated with a little oil and carefully passed up the vagina, through the *os uteri*, which may require dilating, into the uterus. In this operation the points of the fingers are first brought together so as to occupy as little space as possible, and the protruding membrane should lie beneath the hollow of the hand, the back of which is presented upwards on introduction. The placenta is held in the left hand, in order to make use of gentle traction at proper times, and an assistant holds the tail on one side. On entering the womb, the hand is passed to the several centres of attachment—the cotyledons, which are gently pressed between the fingers with a kind of rotary motion, when detachment, as a rule, readily occurs. Violent movements must be scrupulously avoided, as hemorrhage may result.

A little tact and patience will often accomplish wonders. In the removal of the placenta I am careful not to pull too hard, but detach small portions at a time, if possible. No practitioner

in midwifery, in human medicines, would ever deem it proper to leave his patient until the afterbirth was removed, for it would be horrible to leave it to rot away, besides endangering the mother's life. The absurd practice of attaching weights to the membrane is cruel and unscientific and unsightly in appearance. It is abominable to allow the cow to devour the afterbirth, and should certainly never be tolerated.

DIARRHŒA IN CALVES.

Diarrhœa is a very prevalent disease among calves. The sucking calf is liable to this affliction whenever the general health of the parent is impaired. In such cases the mother is to be treated instead of the calf. She probably is the subject of a deranged condition of the digestive organs, which can easily be remedied by the administration of a few doses of HUMPHREY'S CONDITION POWDERS.

This disease occasionally occurs in consequence of weaning the calf—in view of husbanding the cow's milk—and feeding the calf on improper food. This kind of diarrhœa must be treated as follows:

Prepared chalk, one oz.
Tincture catechu, one-half oz.
Tincture ginger, one oz.
Water, one-half pint.

Dose—Two or three teaspoonfuls three times a day in milk, administered by means of a drenching-horn or bottle.

LOSS OF THE CUD.

This enters the list of most cow-leeches' diseases, but is less a disease than a symptom of some other affection; indeed, it is evident that any attack sufficient to destroy the appetite will generally occasion the loss of the cud. It is possible, however, that an occasional local affection or paralysis of the paunch may occur, particularly when it is distended with unhealthy substances, as acorns, the tops of some of the woody shrubs, etc. The treatment in such cases consists in stimulating the stomach.

Open the bowels by giving—as a drench—one pound epsom salts and two drachms powdered ginger, in water, followed by HUMPHREY'S CONDITION POWDERS.

PARTURITION.

SIGNS OF LABOR.

At the end of two hundred and seventy-two days from the period of the cow's impregnation, some enlargement of the udder will be perceived, and the external parts of the genital organs are relaxed and appear tumefied, and a sort of glistening discharge issues from the same. The animal is also restless and appears desirous of avoiding the society of other cows. Her respirations are somewhat quickened; she becomes nervous and irritable, and labor pains set in, occurring at stated periods, until at last, the neck of the uterus dilates, the fœtal membranes present themselves in the form of a watery tumor and the parts admit of the delivery of the fœtus.

NATURAL LABOR.

Natural labor consists of the presentation of the placental membranes, inclosed fluid, with the head and two forefeet of the fœtus.

In act of natural expúlsion the membranes become ruptured and the water escapes. This

lubricates the parts and greatly facilitates the birth of the fœtus.

After delivery a few after-pains occur, by which means the after-birth is expelled. This completes the painful routine of natural labor.

UNNATURAL LABOR.

A cow failing to give birth after the fashion described in the preceding article, and being in a state of parturition, having regular uterine pains, increasing in severity as they successively occur, yet no appearance of the fœtus, is probably the subject of false presentation. The character of this presentation must be ascertained, and our efforts then directed to the replacement of the part to its natural position.

The person who intends to render assistance to the parturient cow should be clad in suitable garments. His arms should be bared to the shoulder, and, in view of guarding against the absorption of morbid virus, the person's arms should be lubricated with glycerine or olive oil. The instruments required are, embryotomy-knife, embryotomy-hooks and slip-nooses.

FORELEG PRESENTING.

The most common false-presentation is that

when the two forelegs are avanced into the vagina, sometimes beyond it, and the head turned upon the fœtal body. This is occasioned by the muzzle having caught at the brim of the pelvis. The delivery cannot be effected until the position is changed, without danger to the mother and certain destruction to the calf. The best plan is to attach a cord, or the slip-nooses to each foreleg, which are then to be forced back into the uterus. The head must then be sought for, and constant pressure exerted on the same until it is sent forward far enough to enable the operator to release it from the brim of the pelvis and guide it into the vaginal outlet. A noose may then be slipped over the lower jaw; then traction on it, and those of the forelegs will accomplish the delivery.

If the calf is dead I should use the embryotomy-hook in preference to the noose; but in view of saving the calf, the latter is the safest. Some care, however, is necessary in drawing out the forefeet, lest the points of the hoofs lacerate the vagina. While the assistants are drawing steadily on the cords, the operator should give them a lateral action—from side to side, and upward and downward. This is far better than pulling persistently in one direction, for it tends

to loosen and alter the position of impacted parts.

ONE FORELEG PRESENTING.

This is also a common occurrence, and if seen early, the delivery may be safely effected by attaching the noose to the protruding leg. This may be pushed back, and the other sought for and secured in the same manner, and again to be returned. The head must then be properly placed, the legs drawn outward and the delivery may be accomplished with every prospect of bringing forth a live calf.

HEAD PRESENTING WITHOUT LEGS.

I proceed as follows: A noose is affixed to the lower jaw; the head is then pushed back as far as it can be got; the forelegs are then brought into position, after which the calf is readily brought away. Some difficulty may be experienced in extracting the hind parts. If they require much force in extraction, the probabilities are that the pelvis of the fœtus is impacted in that of the cow.

The long diameter of the pelvis is crosswise of the body, so that if the calf be in a position that

opposes its long pêlvic diameter to the short one of the mother, it must be pushed back a few inches, and turned, so that its feet shall be downward, in a line with the cow's limbs.

It is very important that the calf should be in in the right position as regards the diameter of the pelvis, for many valuable cows are ruined by the violent means used in the extraction of the hind parts when in a faulty position. A little tact in securing a right position for the exit of the calf would save a vast amount of unneccessary and cruel traction, which in our rural districts, where veterinary surgeons are not to be found, is too often employed.

EXTRACTION OF A CALF ON ITS BACK.

Some persons have an idea, when a wrong presentation of this kind takes place, the calf may be turned. This is an impossibility, and it is only a waste of time and a feat of ignorance to even attempt it. The calf must be extracted in the manner of presentation. The traction, however, should be made in a direction toward the bones of the coccygis or tail.

In the early stages of this kind of parturition, the back rests on the belly of the mother, and

the feet come in contact with her spine. If my services were sought at this early period I should endeavor to bring the feet down, one at a time, and then noose them, and proceed to deliver without making any futile attempts to change the position of the calf.

In a case of this character, which occurred in my practice a short time ago, I found it impossible (the cow being down) to dislodge the feet from the spinal region. I therefore procured a double and single block tackle, and fastened it to a beam which ran across the barn; the hind extremities were then attached to the single block by means of straps, and in this way the posterior parts were elevated. The consequence was, that the whole fœtal apparatus receded into the abdominal cavity, the feet were dislodged from the spine, and I had the satisfaction of delivering the animal a live calf.

BREECH PRESENTATION.

The mode of extracting the fœtus when the breech presents, is as follows:

Pressure must be made upon the buttocks of the calf in the interim of labor pains. Having succeeded in pushing the calf forward the hocks

may possibly be reached; afterwards, the feet. These are to be brought into the vaginal passage; then by traction and altering the position of the calf, if necessary, the delivery is completed. Should it be found impossible to push the fœtus forward, I should lose no time in raising the hind quarters of the cow, by means of hoisting apparatus, which most farmers have on hand. In order to avoid hurting or injuring the cow's limbs when hoisting the hind parts from the ground, I encircle the legs just above the fetlocks with some old gunny-bag, or something of the sort. Then affix a strap on each leg, into which the tackle must be hooked. The cow is, of course, raised from the floor, belly upwards.

ABORTING.

Cows sometimes abort, or have a premature discharge of the fœtus, and sometimes among large dairies this trouble prevails to an alarming degree, and when it does the calves' bones are often soft.

TREATMENT.

As a preventive give the cow HUMPHREY'S CONDITION POWDER as directed, and once a week, give the cow a handful of ground bone. The

theory being that cows, during pregnancy, want a tonic, and also need the bone-meal to assist the system in manufacturing bone for the fœtus.

DISEASES OF THE UDDER,

MAMMITES

Is an inflammation of the udder. It usually consists of tumefaction, attended with heat and pain, and generally sets in shortly after calving.

In this state of the udder scarcely any milk flows, and what comes is often bloody. Soon an entire obstruction takes place, or nothing but a watery secretion can be got away. Next, the udder hardens in places; abscesses form, and then the secretory function of one or more quarters is destroyed. The animal now has the "garget," and ten chances to one if the part or parts are ever restored.

The only way to prevent garget is to let the calf suck immediately after it is born, or else introduce a tube into one or more of the teats and thus evacuate the milk ere it coagulates.

Symptoms—The disease, at its commence-

ment, invariably consists of an inflamed condition of the mamma or "bag," characterized by pain, heat, swelling and more or less febrile symptoms. It it precisely the same disease which many nursing women are prone to and suffer from, and its terminations, when not arrested in the early stage, are exactly the same, namely: suppuration, formation of an abscess, induration, or hardening of the walls of the bag.

TREATMENT.

The disease should be attended to in its early stage, and the milk must be evacuated so that it shall not accumulate or coagulate. In order to do this a metallic tube may be inserted into the teat and allowed to remain there, so that the milk shall flow as fast as it is secreted. The inflamed part must be bathed with cold water several times during the day, to which a few drops of tincture of arnica, and if the parts be very painful an infusion of hops may be used. Afterwards anoint the parts with HUMPHREY'S GOOD SAMARITAN. The animal must be kept on a very low diet—scalded shorts are good—and if she be fat, or the least constipation of the bowels exists, I should give one pound of epsom

salts, dissolved in warm water, to which may be added a small quantity of molasses and a teaspoonful of ginger.

Supposing the case to be in the suppurative stage, and it is evident that pus or "matter" is forming within the "bag," or its walls, it may be poulticed with flax seed.

As soon as the matter burrows to the surface, and a soft spot can be detected, it should have a free opening made into it by means of a thumb-lancet. The matter must then be squeezed out, and into the cavity syringe some salt water or a little tincture of aloes. In suppurative stages I generally order a generous diet and HUMPHREY'S CONDITION POWDERS.

OBSTRUCTION AT THE END OF THE TEATS.

It occasionally happens that a fungus or warty excrescence makes its appearance at the end and centre of the teat, which obstructs the flow of milk and is very annoying and painful to the animal. This should be removed by the knife, taking care to dissect every portion of the morbid growth. The part is then to be sprinkled with HUMPHREY'S CARBOLIC HEALING POWDER. The

milk-tube, well oiled, must now and then be introduced.

OBSTRUCTION IN THE TEATS.

A simple obstruction in the teats is sometimes occasioned by an imperfect union in the lining membrane.

TREATMENT.

This is easily remedied by introducing a tube constructed for the purpose, which should be well lubricated with olive oil, and allowed to remain in the lectiferous channel for several hours, daily, or until all danger of re-adhesion has passed away. The lectiferous outlet is sometimes obstructed by false membranes running across its channel. These must be annihilated by the introduction of the tube.

INJURIES TO THE TEAT.

I have seen many cases of injuries to the teats in the form of an incision, which occurred accidentally on the animal rising from the ground, cutting or lacerating the same with its own hoofs.

TREATMENT.

When the accident is discovered shortly after it happens, the parts may be brought together by

uninterrupted suture. The seam is then coated with collodium, and the milk must be evacuated wholly by the tube, until the parts have united. Sometimes the union is not complete, but a small fistulous opening is left, through which the milk is constantly dribbling. The only way to remedy this is to convert the fistula into a simple flesh wound This is done by means of a sharp pointed knife, which removes the thin callous forming the interior of the fistula. The raw edges are then to be brought together by a suture and collodium and the tube used as before.

SORE OR CHAPPED TEATS AND CHAFED UDDER.

TREATMENT.

First wash with warm water and castile soap wipe dry, then apply HUMPHREY'S CARBOLIC HEALING POWDER, and the cure is assured.

TETANUS, OR LOCKED-JAW,

Now and then attacks cattle, in which case it presents the same appearances and requires the same treatment as in horses.

FOUL IN THE FOOT.

This occasionally comes on of itself, but is more

often the effect of accident or filth. Cleanse it well and keep it from dirt; apply HUMPHREY'S GILT EDGE HOOF OINTMENT, with a small quantity of powdered sulphate of copper, added.

SALT,

Let it be remembered, when given to animals, enables the farmer to increase his live stock and keep them in health; hence it ought freely to be given to sheep and cattle of every description. In the writer's opinion, it should be given once a week, in sufficient quantity to satisfy the appetite. By giving it in quantity it operates gently upon the bowels; for that reason it is much better given in that way than it is to keep it continually before them.

VERMIN ON CATTLE.

A strong decoction of tobacco washed over a beast infected with vermin will generally drive them away. It sometimes will make the beast very sick for a short time and should be used with great caution. But a better remedy is to mix a plenty of strong Scotch snuff in train oil, and rub the back and neck of the creature with it; which will effectually kill or drive away all vermin from a quadruped.

STAGGERS

Are sometimes the consequences of over-feeding, particularly when from low keeping cattle are suddenly removed to better pasturage.

Treat with bleeding, and give one pound epsom salts with two drachms powdered ginger, followed by giving HUMPHREY'S CONDITION POWDERS.

INVERSION OF THE UTERUS.

This is one of the most serious accidents to which the cow is liable after the act of parturition. It is also, unfortunately, somewhat common; from the prevalence of certain causes in some seasons. A considerable number of cases now and again occur in the practice of veterinary surgeons residing in breeding districts. The mucous surface must be cleansed from all adhering filth, straws, blood, etc., by means of tepid water, or milk and water and a sponge. As the animal stands, an additional quantity of litter should be placed under the hind feet, or she may be removed to sloping ground, so that the operation of returning the uterus may be facilitated by having the hind quarters raised, and the operator, if possible, standing higher than the patient.

In partial inversion, the organ is readily returned. The hand being introduced into the vagina is closed and between the acts of straining on the part of the animal the uterus is pushed through the *os uteri* into the abdomen. This is to be done only by successive stages, and all violence must be avoided.

When the uterus has been completely inverted the proceedings are of a more extensive character. The head of the animal should be held by an assistant, and possibly the bull-dog's nose ring may be required, while another holds the tail and pinches the back to divert the attention from straining.

A moistened sheet or large towel is passed beneath the uterus and the ends are held by assistants; when, at the proper time, the whole organ is raised to a level with the vulva; and supposing the organ to be in all respects in a suitable state for the operation and not wholly inverted, the closed fist or a suitable pessary is placed against the central portion or fundus, and by steady and continued pressure when the animal is not straining, the mass is carried through the vagina—*os uteri* and finally into the abdomen. As the acts of straining are continued, the opera-

tor must cease his efforts; but he must be careful to avoid, if possible, the re-inversion of the organ, by retaining his hand without in any degree opposing the animal.

Should the straining continue and prove violent, a dose of HUMPHREY'S COLIC CURE may be administered, which will greatly facilitate matters. It may be necessary to place a strap or rope around the body to prevent straining, and the hind quarters should be raised some inches above the fore.

The diet must be light and mainly fluid, and the bowels should receive attention.

Retention of the womb is often an affair of much concern to the practitioner, and to secure this all kinds of straps and harness, etc., have been adopted with, however, variable results. An oval iron or heavy sole leather ring, four inches long and three inches wide, answers very well, being secured by the ropes, tied to a surcingle buckled around the animal. Many improvements upon this have been made, the principal one being the substitution of iron plates, or thin and light bars, variously worked, so as to admit of being secured in position by cords, and allow free urination. But none have entirely

superceded the leather pad, or plate, already alluded to.

We must not omit to remind the reader that in the use of the rope in any form of truss, all prominent parts must be packed with soft hay, grass, old towels or other suitable materials, so as to avoid chafing, which, in these cases, arises when most unlooked for.

Stitches or sutures are sometimes made use of, being passed through the lips of the vulva so as to draw them together; but they are apt to give rise to irritation.

After turning the uterus, give the animal a box of HUMPHREY'S CONDITION POWDERS, as directed.

CONTAGIOUS PLEURO-PNEUMONIA IN CATTLE

Is not communicable to any other species of animals. It is a disease which is very interesting to some people in this country, as it exists to a more or less extent. It is a disease that has been known for two hundred years in Russia. During the present century it has gradually made its way from east to west. It was noticed in

Prussia in 1802; in England, in 1841; in America, in 1843.

There are various stages; the first consists of an incubatory period, varying from two to six weeks, or even longer, and perhaps the first thing that will be noticed is an increased temperature of the body—to 103, 104, even 105 degrees. Often, before any other signs are developed, there may be slight rigors or shivering, but so slight as to be overlooked. After this, the system becomes impaired. If in a milch cow the secretion of milk is impaired, and there is a slight cough—noticed more in the morning, especially if the animal was kept up all night. The disease gradually grows worse and the cough increases; this may be the only symptom for some time. The animal was thought to be only suffering from a slight cold. After a while the lungs become affected, giving rise to quickened breathing. Animal gradually looses condition; becomes emaciated; hide-bound condition of the skin. A discharge from the nostrils of a whitish or even a fetid character. In the first stages you can, by auscultation, detect a grating sound, due to plural surfaces rubbing together. Concussion reveals a dull, dead sound.

In the second stage the pulse is very quick; usually symptoms of fever; dryness in the muzzle, (nose). The horns may be either hot or cold, and the temperature and the cough increased. Cattle, when suffering lie upon the sternum, (breast) in order to relieve the pressure. If likely to end fatally, the discharge becomes fetid (offensive smell); may have slight diarrhœa, followed by constipation; a peculiar gritting of the teeth; moaning or grunting; the eye has a glassy appearance; debility and death follow. The United States Government has lately undertaken to extirpate this disease by killing and paying the owners for all cattle that have been exposed to it. The author thinks this is a wise move and that it has not been commenced any too soon, for if this disease ever gets among the cattle on our Western prairies it will cost enormous sums of money, besides it can never be got rid of.

MILK OR PURPURAL FEVER.

It usually shows itself the second, third or fourth day after calving. The supply of milk is impaired more or less; the urine is coffee-colored and it usually attains its intensity in from

six to ten hours. The cow paddles with her feet when walking; looks at the sides; lies down and in some cases is not able to get up. When a cow becomes affected by urinary or abdominal diseases she is generally very helpless. She will moan, stretch out the neck, lift the head and look at the flanks; respiration increases; the mouth, muzzle and horns become hot; and the temperature of the body is increased; constipation is present, and if any fæces (dung) are passed they will be hard and covered with mucous; there may be a discharge of a brownish colored fluid from the vulva; and power is lost. It is a very fatal complaint.

Give one pound and a half epsom salts, two drachms powdered ginger. Give injections of soap-suds. Then while convalescing, give HUMPHREY'S VETERINARY NERVE REMEDY.

The author has never lost a case where he could succeed in opening the bowels. As a preventive before calving, feed the animal sparingly, and give one-quarter pound epsom salts, daily, until bowels are opened.

PERPETUAL BULLING

Is due to an abnormal condition of the ovaries,

and in well-bred cattle, to tubercular disturbance. The best treatment, perhaps, is ovariotomy (spaying). It sometimes occurs in the mare.

STOMACH OF THE COW.

The stomach of the cow is divided into four stomachs or divisions. The first is the rumen or paunch; the second, the reticulum or honeycomb; the third, the omasum; the fourth, the obomasum, or true digestive stomach. The food is taken into the mouth and masticated to a certain extent; it is then swallowed and passes into the rumen. When the rumen is full the process of rumination commences. There is some difference of opinion about this process. Some claim it is performed by the rumen and others that it is done by the second, and some by the third stomach; but some ruminants have no third stomach, so that it must pass from the rumen up the œsophageal canal into the omasum and true digestive stomach.

DOGS.

INDIGESTION.

Symptoms—Flatulency; acrid eructations; constipation, or diarrhœa; fullness of the abdomen;

spasmodic pains; depression; loss of appetite; dry, furrowed tongue; thirst often increased; salivary secretion; vomiting; and occasional cough.

Constipation may be relieved in the first instance by a dose of castor oil, followed, if necessary, with enemas.

Diarrhœa generally proceeds from the presence of undigested matter in the intestinal tract, and castor oil should be applied. Acrid eructations and flatulency (wind) are best treated with small doses of bi-carbonate of soda and charcoal—ten grains of the former and one scruple of the latter—given in a little water or made into a bolus, administered after each meal.

Indigestion usually requires a moderate and plain diet; lime-water and milk with simple biscuit or bread, form the most suitable, until the digestive organs have assumed a healthy tone. Fatty, and as a rule, vegetable matters should be for a time avoided. Exceptional cases are those arising from general debility. In such the food must be nourishing, and small doses of sulphate of iron and cod liver oil will materially assist in restoring the animal to a healthy condition. Daily exercise should be insisted on. HUMPHREY'S VETERINARY NERVE REMEDY will be found

especially beneficial for dogs troubled with indigestion.

COLIC.

This disease in a dog is not of that frequency which might be expected from the strange circumstances under which at times he exists, the exertions required of him, the exposure he is subject to, and the bill of fare.

Symptoms—Colic comes on suddenly; the animal is to all appearance in perfect health, when he utters a sharp cry of pain, and, with his back arched and abdomen drawn up, he walks restlessly about whimpering or moaning and endeavoring vainly to find ease in various postures. Considerable tympany (wind) is often present, giving the animal a tense, inflated appearance.

TREATMENT.

Give one or two teaspoonfuls of HUMPHREY'S COLIC CURE. Impaction of the rectum is best removed with warm soap-sud injection. Flatulency (wind) may be relieved by aromatic cordial and antacids, as

Sodæ carbonate, 10 to 20 grains.

Essence of peppermint, 5 to 10 minims.

In a tablespoonful of warm water, or

Spirits ammon aromatic, 20 to 30 drops.
Ginger, 10 grains.
Administer in the same way.

When the pain is severe, a teaspoonful or two, equal parts of brandy and water, may be given and repeated in an hour if not relieved.

Rubbing the abdomen affords ease, and in extreme cases mustard may be applied.

CANKER.

In cases of canker, whether internal or external, it is absolutely necessary, in order to insure success and rapidity of cure, the animal should be prevented as much as possible from flapping, scratching or rubbing the ears. For this purpose a cap of light leather or stout calico should be placed over the animal's head and tied underneath the throat. It should be similar in shape to a horse's hood and is kept easier in position than the usual three-cornered one.

HUMPHREY'S CARBOLIC HEALING POWDER is an excellent remedy to apply to the sore parts.

WARTS.

Warts on dogs are generally known as isolated

growths, or dispersed in scanty groups on different parts of the body.

TREATMENT.

Excision, ligature or caustic. In isolated warts the two former are preferable, and the occasional application of caustic may follow. I have found the oxide of mercury made into a paste with sulphuric-acid and a thin layer applied to the surface of the wart, more effectual than anything else. Of course the latter treatment is chiefly adapted to external warts.

FLEAS.

TREATMENT.

Among the popular remedies for the destruction of fleas may be mentioned Persian insect powder, various dog soaps, parrafine, benzoline, tobacco water, carbolic acid solutions, etc. I usually, and with success, prescribe the following:

Spirits camphor, 1 drachm.
" turpentine, ½ drachm.
Acid carbolic, 10 minims.

A tablespoonful in half a pint of chilled water, to be rubbed into the skin with a piece of flannel. Wash off in twenty-four hours with soft soap and

warm water and repeat in three days if necessary.

LICE

Are generally found about the back and posterior parts. They are hatched from eggs or nits attached to the hair. The dog louse causes no irritation to the human skin.

TREATMENT.

The white precipitate powder brushed into the coat, or the ointment rubbed in the skin and removed in the course of five or six hours will effect their removal.

TICKS.

The dog tick is uncommon; the creature causes considerable irritation to the dog, and from feeding on the blood by suction, gives rise, where they exist in any number, to debility.

TREATMENT.

Forcible removal and dressing with mercurial ointment.

WORMS.

With regard to treatment of worms various

escape of morbid matter. This completes the operation.

In the course of a week or ten days the deep-seated ligatures may be pulled away, and when the integument is well united, the external stitches may also be removed. The wound is healed by nature, and scarcely, if ever, requires any sort of dressing. If it should, use HUMPHREY'S CARBOLIC HEALING POWDER.

REMOVAL OF THE AFTER-BIRTH.

The retention may prove of great inconvenience after a time, from putrefaction, which is likely to ensue. Absorption of the products of that process from the surface of the uterine mucous membrane secures the establishment of a blood poison and putrid fever. No harm, however, may arise during a few days; but the removal should not be delayed beyond that time, more especially if the signs of decomposition have arisen.

Mechanical interference, from that state having commenced, may be required even at a much earlier period. Give two tablespoonfuls of HUMPHREY'S CONDITION POWDERS in a good, warm bran mash, with a handful of salt, when you first

see that the placenta (after-birth) has not been expelled, and in nine cases out of ten you will have no further trouble with the case.

In order to remove, by mechanical means, the hand is first lubricated with a little oil and carefully passed up the vagina, through the *os uteri*, which may require dilating, into the uterus. In this operation the points of the fingers are first brought together so as to occupy as little space as possible, and the protruding membrane should lie beneath the hollow of the hand, the back of which is presented upwards on introduction. The placenta is held in the left hand, in order to make use of gentle traction at proper times, and an assistant holds the tail on one side. On entering the womb, the hand is passed to the several centres of attachment—the cotyledons, which are gently pressed between the fingers with a kind of rotary motion, when detachment, as a rule, readily occurs. Violent movements must be scrupulously avoided, as hemorrhage may result.

A little tact and patience will often accomplish wonders. In the removal of the placenta I am careful not to pull too hard, but detach small portions at a time, if possible. No practitioner

the best agents. Where the inflammatory action is excessive and the pain extreme, the surface may be pricked in two or three places and leeches applied, followed by applying HUMPHREY'S CARBOLIC HEALING POWDER.

OVERGROWTH OF CLAWS.

The claws occasionally (especially with dogs which have but little walking exercise), become considerably elongated and curving underneath, sometimes penetrating the pad of the foot, causing intense pain and inflammation.

TREATMENT.

Shorten the claws with sharp-cutting nippers and poultice if injured. It is not advisable to reduce the claw too much at first, but repeat the operation in a fortnight. To prevent the recurrence of such a condition, allow the dog plenty of liberty and exercise, so as to produce the wear necessary for the proper length and shape.

SHEEP.

FOOT-ROT.

Causes—General debility; exposure in wet pastures; contagion; foul habit of body.

Symptoms—The sheep is observed to limp in one or both of the fore or hind legs. Sometimes the whole four are affected; the parts are hot, tender and swollen and exude a fetid fluid. The animal is now incapable of walking, and if not speedily relieved, death ensues. This form of rot is contagious, so that if the diseased animals are not separated from the healthy, the latter soon become infected. To propagate malignant rot it is quite sufficient that a flock should pass over a place which has a little before been walked over by diseased sheep.

TREATMENT.

Endeavor to ascertain the exciting cause, and, if possible, remove it. If the disease has assumed a putrid type the superfluous horn may be removed. The parts are then to be washed with

Acetic acid, 4 ounces.
Water, 3 ounces.

A piece of lint is afterwards to be saturated with the above and applied as a dressing, and changed as occasion may require.

The local remedy will avail but little unless we sustain the living powers and thus improve secretions. Our usual remedies are, HUMPHREY'S CONDITION POWDERS, or

Powdered golden seal, 1 ounce.
" sulphur, ½ ounce.
" charcoal, 1 ounce.
" sassafras, 1 ounce.
" assafœtida, 2 drachms.
Flaxseed, 2 pounds.

Mix, and give a tablespoonful twice a day, in food.

GRUBS IN THE NOSTRILS.

Grubs in the nostrils are occasioned by the gad-fly, which deposits her ova in the nostrils of sheep. After a short time the ova brings forth parasites in the larvæal state; the latter migrate within the interior of the nostrils, causing the sheep much pain. It seems that the gad-fly selects its subjects, and the weakest of the flock are usually its victims; hence close attention to the requirements and condition of a flock may, to a certain extent, act as a preventive. Some farmers, in view of preventing the attacks of the gad-fly, smear the noses of their sheep with common tar. Others plow up a piece of land where sheep are pastured, into which they thrust their noses, and then for the time being they baffle the gad-fly. I do not think it good policy to attempt

to dislodge the parasite; for the remedy might be worse than the disease. When the ova have arrived at maturity the sheep themselves aid in the dislodgement with acts of snorting, sneezing and coughing.

SHEEP-WASH FOR VERMIN.

TICKS.

These troublesome parasites may be easily got rid of by dipping the sheep in an infusion of tobacco.

WASH.

Take of arsenious acid, in powder, and carbonate of potash; of each six ounces. Boil together in fourteen gallons of water, half an hour.

A more complex form is as follows: Take of arsenious acid, in powder, soft soap and carbonate of potash, of each six ounces; sulphur, four ounces; hellebore root, bruised, two ounces; water, fourteen gallons. Boil in a portion of the water until the arsenic is dissolved, then add the remainder of the water and strain through a course sieve.

INFLAMMATION OF THE LUNGS—PNEUMONIA.

Inflammation of the lungs is usually the result

of exposure, or it may arise in consequence of herding too many sheep together—sometimes it makes its appearance without any perceptible cause. An impure atmosphere, however, may be set down as the ordinary exciting cause.

TREATMENT.

Give HUMPHREY'S FEVER REMEDY in teaspoonful doses, twice a day, followed when convalescing with HUMPHREY'S NERVE REMEDY, same sized doses. Place upon the tongue ten drops fluid extract of gelseminum, morning and evening; dissolve one ounce of chlorate of potash in half a pint of flaxseed tea and give it daily as a drench, until the animal improves. Let the patient be placed in a secluded spot, under cover, and if the case is curable, health will soon return. The most marked symptoms of pneumonia are panting and heaving at the flanks, quickened respiration, discharge from the nose, and cough. There is also a cessation of rumination. In short, the same symptoms prevail in this disease as in pneumonia in cattle.

DIARRHŒA AND DYSENTERY.

Curable cases are brought to a favorable termination by using the following drench:

Finely pulverized charcoal, 1 ounce.
Scalded milk, 1 gill.
Hypo-sulphate of soda, 1 drachm.
Mix.

The above constitutes a dose. It may be repeated as often as the emergency may seem to require; but should the subject be a young lamb, one-half the quantity will suffice.

CONSTIPATION.

Constipation often results from a deranged condition of the digestive organs. The liver becomes deranged, resulting in costiveness, for which, give the following drench:

Epsom salts, 2 ounces.
Fluid extract of leptandra, 1 teaspoonful.
Thin gruel, ½ pint.

Dissolve the salts in the gruel and drench the animal with the same.

TYMPANITES OR WINDY DISTENTION OF THE INTESTINES AND ABDOMEN.

This disease is recognized by the bloated appearance of the sheep. It is occasioned by the food fermenting and generating gas. The following is a most excellent remedy:

Hypo-sulphite of soda, 4 drachms.
Fluid extract of golden seal, 1 drachm.
Fluid extract of ginger, 2 drachms.
Water, 1 wine-glassful.

Followed by HUMPHREY'S CONDITION POWDERS, as directed.

FOWLS.

DISTEMPER IN FOWLS.

For fowls with distemper, one teaspoonful of HUMPHREY'S VETERINARY NERVE REMEDY, mixed with a pint of food and given to them alternately with HUMPHREY'S CONDITION POWDERS, one teaspoonful to each pint of food, is a positive preventive, and if the malady has not run too long, will cure them.

TO MAKE HENS LAY.

There is nothing that will make hens lay eggs equal to HUMPHREY'S CONDITION POWDERS, given to them by mixing three teaspoonfuls of the powders in each quart of the food.

CAPONIZING ROOSTERS.

The object of caponizing is to improve the

quality and increase the quantity of the flesh of fowls. A capon will outgrow a cock of the same age just as an ox will exceed a bull in weight and for the same reasons, which are, that castration makes an animal less restless and quarrelsome, and less of the nutriment it digests is diverted from flesh-forming.

The operation is not very difficult and is quickly performed after a little practice.

The instruments consist of a pair of crooked concave forceps, a pointed hook, a pair of tweezers and a steel splint with a broad, flat hook at each end. Remove the feathers upon a spot little larger than a watch, at a point upon line between the thigh and shoulder. Next pull the skin backward, so the skin may slip forward again after the operation is completed, and with a keen knife make an incision an inch and a half long, parallel with the two last ribs and between them, until the intestines are visible, taking care not to injure the latter. Now separate the ribs by attaching one of the hooks to each, and allowing the ends of the splint to spread, as they will do when let go. The intestines may be pushed away with a teaspoon handle, or other flat, smooth instrument, and when the testicles are found (attached to the

back), the tissue which covers them must be held by the tweezers and torn open with the pointed hook. Next grasp one of the testicles with the crooked concave forceps, and with the tweezers lay hold of the spermatic chord, to which the testicle is attached. Now twist the testicle off with the crooked concave forceps, after which the operation is repeated on the other testicle, the incision is closed (no sewing being necessary), the skin allowed to resume its place, and then the feathers which were removed are stuck on the outside and left to adhere by means of the blood, forming the only bandage necessary. Take pains not to disturb the parts to which the testicles are attached. the pressure of the tweezers tends to prevent pain and loss of blood. Wrenching off the testicles is more humane than the old method of cutting them with a horse hair and is more expeditious, and torsion produces less bleeding than cutting.

There need be no more than six or eight per cent. of the birds killed, even by an indifferent operator, and as those die by bleeding to death, they may be eaten as if they had been butchered in the regular way. To avoid bleeding, take care not to rupture the large blood vessels at-

tached to the organs removed. The best age for cockerels to be operated upon is three or four months. In order that the intestines may not be distended, prepare the bird by shutting it up without food or drink for thirty-six hours previous to the operation. Capons continue to grow fat for a long time, and they should be kept until twenty months old in order to gain the full advantage of the operation.

The feathers on each side of the incision can be twisted together with the bloody fingers to help hold the wound together. After the operation give the birds plenty of water, but feed very sparingly with soft cooked food until they move around with ease and begin to scratch. If fed to the full with hard grain at first, some will die.

Caponizing may be defended against objections on the score of cruelty just as well as castrating colts, calves, pigs and lambs. The rearing of capons will certainly be followed to a great extent in this country so soon as the people learn the excellent quality of the flesh, which is not only extremely delicate and juicy, but the birds grow to nearly the size of turkeys, and are so quiet that their growth is produced with less

feed than in the case of fowls. Already there are many persons making money rapidly at the business. Capons command prices from 30 to 50 per cent. higher than other poultry in market.

APPENDIX.

THE majority of people in this country have had, or do continually have some experience in the care of animals. Therefore, it has been my effort to produce a manual of information regarding their treatment that will be appreciated by every reader interested in horses or cattle. I do not claim that I can remove a bony deposit from the limb of an animal, or produce a growth of the horn of foot by giving a few drops of medicine on the tongue, but I do claim that the medicines and remedies advised herein are as near infallible as any procurable, and when I advise giving a boll, I mean that the animal *does* need a cathartic. If I recommend a blister, I mean the animal *should be* blistered. Where a condition powder is prescribed, it means that the animal should have the most effective in the market, etc. I wish to state right here, that there are several

condition powders offered on the market that are good, and put up upon honor, and that there are also several kinds that are put in large packages that are calculated to deceive, made of chaff, or some such substance, that is utterly worthless and dear at any price. I have examined several such powders and found in some of them very little medicine, and in some of them I failed to detect a particle of medicine of any kind. If the purchaser would stop to think, he must know that it is impossible to buy medicine in such large bulk for so little money. By tasting and comparing them with HUMPHREY'S CONDITION POWDERS they would readily see the difference between a good and a worthless article.

Our fluid remedies are the result of long study and practice and can be depended upon for the following complaints:

HUMPHREY'S VETERINARY FEVER REMEDY cures inflammation of the lungs, bowels, eyes, brain and liver; congestions, sore throat, influenza and pink eye; also cures cows with milk fever. It acts directly on the heart, arteries and kidneys. In many instances it may be used with advantage, given alternately with HUMPHREY'S VETERINARY NERVE REMEDY.

HUMPHREY'S VETERINARY NERVE REMEDY cures colds, coughs, staring coat, unhealthy skin, bloody urine, profuse stalling and weakness of the loins. It acts directly on the nerves, heart, urinary organs and general system. In many instances it may be used with advantage, given alternately with HUMPHREY'S VETERINARY FEVER REMEDY.

HUMPHREY'S VETERINARY BLOOD REMEDY cures enlarged glands, farcy buds, discharges from the nose, grease, swollen legs, abscesses, ulcers, and water farcy. It acts directly on the blood and lymphatic system.

These remedies can be procured at $1.50 for large, and 50 cents each for small size bottles.

HUMPHREY'S PHYSIC BOLLS have been thoroughly tested by many of our most proficient horsemen, and were never found wanting if used as per directions that come with each boll. Do not fail to have them in your stable, as but few druggists are competent or willing to make up an efficient physic boll for an animal.

The list of testimonials published is proof positive that HUMPHREY'S GILT EDGE HOOF OINTMENT has no equal, and should always find a place in the stable.

HUMPHREY'S CARBOLIC HEALING POWDER is a certain cure for all sores or wounds of the skin or flesh, and HUMPHREY'S SPAVIN BLISTER is superior for spavins, ring bones, splints, curbs, sprained tendons, sprained ligaments, sprained joints, sore throat, etc. This blister is infallible. Do not grease or wash the parts after applying. It will do its own work, will not blemish, and promotes the growth of the hair.

It will always prove a great saving of time and money to have a bottle of HUMPHREY'S CELEBRATED COLIC CURE at hand, as its wonderful qualities have given it a world-wide reputation.

HUMPHREY'S GOOD SAMARITAN is almost infallible in cases of sprains, bruises or pains, for man or beast. This fact has become too well known to require comment.

We are now putting up handsome Veterinary Medicine Chests made of walnut, highly polished, containing a full line of Humphrey's Veterinary Remedies and a copy of THE VETERINARIAN, handsomely bound. These chests are certainly a most valuable acquisition to every stable.

If, at any time, any persons using our medicines want advice regarding sick animals will write to us, stating the facts plainly, we will give

them the best advice we can without any charges whatever.

We also manufacture a few family medicines, which on trial will be found superior to any for the purpose, among which we mention HUMPHREY'S BALSAM OF HONEY AND TAR, for coughs, colds, bronchial affections, consumption, etc.

LOVELAND'S LITTLE LIVER PILLS cure headache, indigestion and sour stomach.

DR. CROSBY'S LIVER AND BLOOD REMEDY cures liver complaints, piles, constipation of the bowels, etc.

MCDAVITT'S MAGNETIC SALVE heals all kinds of sores, wounds, burns, scalds, etc.

If your dealer does not keep these goods, send direct to us.

HUMPHREY'S VETERINARY AND
FAMILY MEDICINE M'F'G. CO.,
Newark, N. J.
W. P. HUMPHREY, D. V. S.

THE ACTION OF MEDICINES AND

Agent.	Internally. Action and Uses.	Externally. Action and Uses.
Acid, Acetic	Astringent.	Antiseptic / Rubefacient
" Carbolic		Caustic / Antiseptic
" Hydrochloric	Tonic	Caustic
" Nitric	Tonic	Caustic
Aconite root, Tincture of	Sedative	Sedative
Alcohol	Stimulant	Stimulant
Alum	Astringent	Astringent
Aloes	Alterative / Purgative	Stimulant
Ammonia, Water of		Stimulant / Rubefacient
Ammonia, Carbonate	Stimulant	
Ammonia, Liquor Acetates	Diaphoretic	Discutient
Anise Seed	Aromatic	
Antimony, Butter of		Caustic
Areca Nut	Anthelmintic / Destroys w'rms	
Arnica, Tincture of	Stimulant	Resolvent
Assafœtida	Antispasmotic	
Arsenic	Alterative / Tonic	Caustic
Belladonna, Fluid Extract	Sedative / Narcotic	
Buckthorn, Syrup of	Cathartic	
Calabar Bean, Powdered	Peristalsis and	
" " Alkaloid of	Cathartic	
Camphor	Narcotic	Discutient
Cantharidine	Diuretic and / Stimulant	Blister
Cayenne Pepper	Stimulant	Rubefacient
Catechu	Astringent	
Castor Oil	Cathartic	
Chloral Hydrate.	Narcotic	
Chloroform	Anæsthetic	
Colchicum	Diuretic / Laxative	
Copper Sulphate	Tonic	
Croton Seed	Purgative	
Digitalis	Narcotic / Diuretic	

PROPER DOSES FOR DIFFERENT ANIMALS.

Dose. Horse.	Dose. Cattle.	Dose. Sheep.	Dose. Hog.	Dose. Dog.
.....	.....	.....	.....	.....
For Sores: Crystalized Carbolic Acid 1 part; Water 40 parts.	15 to 40 d'ps	5 to 8 drops..	5 to 8 drops..	1 to 2 drops.
2 to 4 dr.....	2 to 4 dr.....	.....	... .	.....
1 to 2 dr.....	2 to 3 dr.. ...	....	.....	.....
15 to 20 drops	15 to 30 drops	2 to 3 drops..	.....	1 to 2 drops.
1 oz.	1 to 3 oz.....	½ oz.....	2 dr.....	1 dr.
2 to 3 dr.....	2 to 4 dr.....	½ to 1 dr.....	½ to 1 dr.....	10 to 20 gr.
2 to 10 dr....	1 to 2 oz.....	½ to 1 oz ..	2 to 5 dr.	½ to 1½ dr.
....	.....	....	.....	....
2 to 4 dr.....	3 to 6 dr.....	15 to 60 gr....	15 to 60 gr....	3 to 8 gr.
2 to 6 oz.....	2 to 6 oz.....	.....	... .	.....
1 oz..	1 to 2 oz.....	2 to 3 dr.....	2 to 3 dr.....	20 to 50 gr.
. .....	.....	.....	....	.....
4 to 6 dr.....	.....	....	.....	¼ to 2 dr.
4 to 6 dr.....	8 dr..	.....	.....	6 to 8 drops.
1 to 3 dr.....	1 to 4 dr.....	1 dr.....	....	10 to 20 gr.
5 to 10 gr. ...	5 to 10 gr. ..	1 to 2 gr.....	.....	1-10 to 1-5 gr.
1 to 2 dr.... .	2 to 3 dr.....	20 to 30 drops	.....	2 to 5 drops.
.....	.....	.....	.....	1 to 3 oz.
5 to 8 gr.....	5 to 8 gr.....	....	.....	1 to 2 gr,
⅛ gr.....	⅛ gr..	.....	.....	1-20 gr.
1 to 2 dr.....	2 to 4 dr.....	20 to 40 gr....	20 to 40 gr....	5 to 10 gr.
5 to 15 gr.....	10 to 20 gr....	2 to 8 gr.....	2 to 8 gr.....	½ to 2 gr.
10 to 20 gr....	10 to 25 gr....	... .	.....	.....
1 to 2 dr.....	2 to 5 dr.....	1 to 2 dr.....	1 to 2 dr.....	5 to 20 gr.
1 pint.....	1 pint.....	2 to 4 oz.. ...	2 to 4 oz.....	1 to 2 oz.
½ to 1½ oz..	1 to 2 oz.....	1 to 3 dr.....	1 to 3 dr.....	10 to 30 gr.
½ to 1½ oz..	1 to 2 oz.....	20 to 40 drops	20 to 40 drops	5 to 10 drops.
1 to 2 dr.....	1 to 3 dr.....	10 to 20 gr...	4 to 8 gr.....	2 to 8 gr.
1 to 2 dr.....	1 to 4 dr.....	20 to 30 gr....	5 to 10 gr.....	¼ to 2 gr.
20 to 35 gr...	40 to 50 gr....	6 to 10 gr.....	5 to 8 gr.....	1 to 6 gr.
10 to 30 gr...	30 to 60 gr....	8 to 15 gr.....	2 to 10 gr.....	1 to 4 gr,

THE ACTION OF

AGENT.	INTERNALLY. Action and Uses.	EXTERNALLY. Action and Uses.
Epsom Salts	Cathartic	
Ether, Sulphuric	Antispasmodic	
Gall, Nut	Astringent	
Gentian Root	Tonic	
Ginger	Tonic and Stimulant	
Glauber Salts	Cathartic	
Hyoscyamus, Fluid Extract	Narcotic	
Humphrey's Fever Remedy	Sedative and Diaphoretic	
Humphrey's Nerve Remedy	Tonic and Diuretic	
Humphrey's Blood Remedy	Alterative and Deobstruent	
Iodine	Glandular excitant	Glandular excitant
Ipecacuan	Emetic	
Iron Sulphate	Tonic	
Jalap	Purgative	
Juniper Oil	Diuretic	
Linseed Oil, Raw	Cathartic	
Morphine	Narcotic	
Nux Vomica	Nerve Tonic	
Podophyllin	Cathartic	
Potassium, Iodite	Alterative and Glandular excitant	
Potassium, Bromide	Alterative	
Saltpetre	Febrifuge	
Potassium, Nitrate	Diuretic	
Quinine	Tonic	
Strichnine	Stimulant to the Motor Nerves	
Saliclyic Acid		
Silver, Nitrate	Caustic	
Sulphur	Laxative	
Sweet Spirits of Nitre	Diuretic	
Turpentine, Spirits of	Diuretic and Antispasmodic	Irritant

Dose. Horse.	Dose. Cattle.	Dose. Sheep.	Dose. Hog.	Dose. Dog.
2 to 8 oz.....	1 to 1½ lbs...	.....	.....	1 to 8 dr.
1 to 2 oz.....	2 to 3 oz.....	2 to 3 dr.....	2 to 4 dr.....	30 to 60 drops.
4 to 5 dr.....	½ to 1 oz.. ..	30 to 60 gr....	30 to 60 gr...	5 to 10 gr.
4 to 8 dr.....	1 to 2 oz.....	1 to 3 dr.....	30 to 60 gr....	5 to 20 gr.
4 to 8 dr.....	1 to 3 oz.....	1 to 2 dr.....	30 to 60 gr...	10 to 30 gr.
.....	6 to 20 oz.....	.....	.. ..	....
1 to 2 dr.....	1 to 2 dr.....	....	....	.....
1 to 3 dr.....	1 to 4 dr.....	1 dr.....	1 dr...	½ dr.
1 to 3 dr.....	1 to 4 dr.....	1 dr.....	1 dr.....	½ dr.
1 to 3 dr.. ...	1 to 4 dr.....	1 dr.	1 dr.....	½ dr.
10 to 40 gr....	20 to 60 gr....	5 to 30 gr.. ..	1 to 10 gr.....	2 to 6 gr.....
.....	....	.....	20 to 30 gr...	15 to 30 gr.
1 to 3 dr.....	2 to 4 dr.....	20 to 30 gr....	10 to 20 gr..	5 to 10 gr.
.....	.....	.....	1 to 4 dr.....	1 to 2 dr.
1 to 2 dr.....	1 to 2 dr.....	....	.....	5 to 10 drops.
1 to 1½ pint..	1 to 2 pints...	6 to 8 oz... ..	6 to 8 oz.....	1 to 2 oz.
2 to 6 gr.....	3 to 10 gr.....	½ to 1 gr.....	½ to 1 gr.....	½ to ½ gr.
1 dr	2 to 3 dr.....	20 to 40 gr....	10 to 20 gr....	1 to 4 gr.
1 to 2 dr.....	1 to 2 dr.....	.....	.....	1 to 2 gr.
½ to 1 dr....	2 to 3 dr.....	20 to 60 gr....	20 to 60 gr...	5 to 15 gr.
1 to 3 dr.....	2 to 4 dr.....	20 to 60 gr....	20 to 60 gr...	5 to 15 gr.
2 to 6 dr... ..	1 to 2 oz.....	1 to 2 dr.....	30 to 60 gr....	10 to 30 gr.
10 to 20 gr....	30 to 40 gr....	5 to 10 gr.....	4 to 10 gr.....	1 to 5 gr.
1 to 3 gr.....	3 to 6 gr.....	⅓ to 1 gr.....	.....	1-30 to 1-10 gr.
1 to 2 dr... .	1 to 2 dr.....	10 to 15 gr....	.....	10 to 15 gr.
5 to 10 gr.....	5 to 10 gr.....	2 to 4 gr.....	½ to 1 gr.....	⅓ to ½ gr.
3 to 4 oz.....	4 to 6 oz.....	1 to 2 oz.....	1 to 2 oz.....	6 dr.
1 to 2 oz.....	1 to 4 oz.....	2 to 4 dr.....	1 to 2 dr.. . .	15 to 60 drops.
1 to 2 oz.....	1 to 2 oz.....	1 to 2 dr.....	.....	⅓ to 1 dr.

References.

The following is a list of a number of firms who handle our goods and others with whom we have dealings. These we respectfully offer as reference.

A.

W. A. Applegate.....Stanhope, N. J.
C. H. Adams .....Dunellen, N. J.
Jno. C. Anderson .....Hazlet, N. J.
J. D. Allen.....Paterson, N. J.
C. C. Abeel, Jr.....Catskill, N. Y.
Chas. D. Alger .....Preston Hollow, N. Y.
J. H. Applegate..... .Farmingdale, N. Y.
J. A. Arey.....Pool, Rowan Co., N. C.
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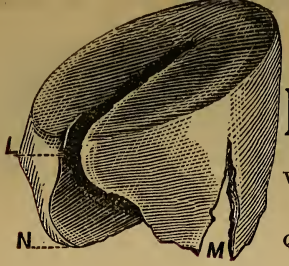

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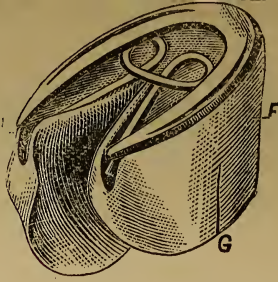

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